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Science

FEBRUARY 1971

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Another great
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First look: Rigger's
new H.O. car

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Tiger 1

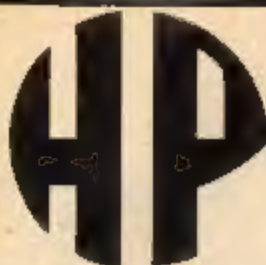
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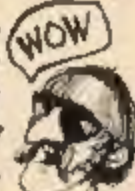
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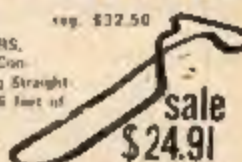


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MODEL CAR *Science*

VOLUME 9, NUMBER 2

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6/Model Car Science

QUESTION SESSION

Q Where can I find (beg, borrow or steal) a set of mags and slicks from Monogram's big scale accessories for my 1/8 scale Corvette? What 1/25 scale kits have a Dodge or Plymouth 383 engine? Also, what kits are the Goodyear Terra tires from which you used on the off-road Austin in the June 1970 issue of MCS?

Jim Elsmore
Barberton, Ohio

A Three out of four isn't bad, but you can't buy these any more. They are discontinued. I've searched through several kits but all I can find are 340 mills and big Hemis. Can anybody turn us on to a 383 or 413? The Terra tires can be found in MPC's Gator Jeep kit.

Q I am having trouble with my H.O. track. When the car gets to a certain spot on the track, it slows down. What can be done? Also, is there any way to rethread the body where you put the screws through? Thank you.

Kevin O'Donnell
Staten Island, New York

A If your track is fairly long, you may have to add a "hooster" terminal track at the point farthest from the transformer. Otherwise, your problem sounds like poor contact. Clean the pick-ups on the car with a pencil eraser until they are shiny. Now you should polish the track rails with a "Bright Boy" pad or an ink eraser. The only ways I know of are to use oversize screws or fill the holes with epoxy and drill new ones. Why not scrap the body and buy a lightweight Kirby or Lancer? You'll be miles ahead for it!

Q I have noticed in your question section in *Model Car Science* you need a Lesney Coronation Coach. I have been looking for the past two years for some sort of unusual body like that for a model I wish to build. Could you please answer the following questions?

a.) Is the coach in 1/24 or 1/25 scale?

b.) Is this a model kit or a toy?

c.) Is it made of plastic or what?

I have never seen such a kit available. In the December 1967 issue, on page 62, there is the model I would like to build. It says the body is from a discarded perfume box; however, this is wrong. I have seen this body (drawn by horses) on a birthday cake in a bakery window about a year ago.

d.) Is this the kit body you are looking for?

e.) If not, do you know the name of it?

Thank you for your time concerning this matter.

Bill Dolores

San Francisco, Calif.

A Lesney made the coach in small and large sizes. The small size would look right in a H.O. layout while the larger size is more along the lines of 1/32. The model came pre-assembled and was distributed right after Elizabeth became Queen. Both of the models are die-cast of metal.

Q I would like to know if there is a way to make Zoomie Headers like those used on funny cars (that came out on the sides of the body).

Bob Murray

Maple Hts., Ohio

A The easiest method in 1/25 scale is to use Plastruct's plastic rod. This is a plastic tube with a wire running down through the core. Cut off eight equal pieces and bend them to shape with a pair of needle nose pliers. Glue them onto the engine with Plastruct glue and paint them flat white, flat black, or chrome silver.

Q A few months ago, I bought a Riggen anglewinder from my local raceway. I am wondering what would be the best ohm rating for my controller. I had been using a controller rated at 15 ohms but was wondering if a lower rating would help. The motor is the stock 26D. The motor has a 9 tooth pinion and the rear axle a 33 tooth anglewinder gear.

Joseph Kontkanen
Arlington, Virginia

A If your motor is stock, you're better off with your present controller. I prefer the feel and smooth response of a higher rated controller. The best thing to do is to borrow a friend's controller for a few hot laps until you decide what rating fits your driving style. You may find that a 7 ohm controller is too sensitive and touchy.

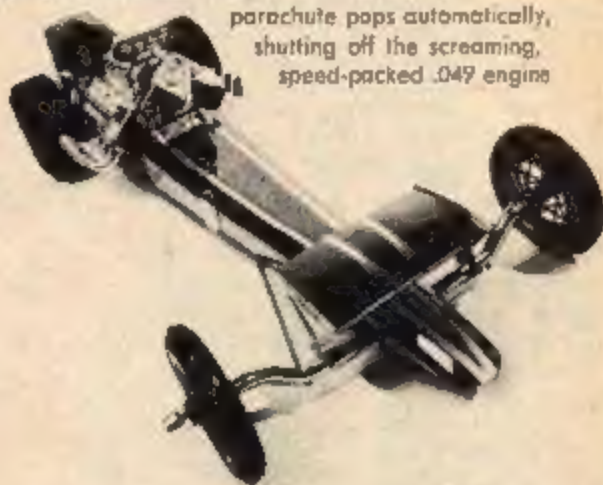
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Q I am interested in the new Tycopro cars. I recently purchased one of these fantastic little cars and am going to get some A.J.'s tires for it. I was wondering, which would be the best, silicone or sponge? Also, could you tell me how to keep all that noise from being transferred into the body?

Michael Brewer

Birmingham, Alabama

A The brand of tires you choose are as important as the difference between wet and dry tires on a real car. You didn't mention the track surface you're running on, but I'll bet it is Aurora or Tyco plastic track. On these tracks, a very soft silicone cleaned with A.J.'s T-N-T cleaner is excellent, regardless of what others might say. The sponge tires are more at home on a fiberboard surface, such as you'd find on a routed track. All of what noise? Something is awry if you've got excessive noise. First, track down your noise and try to eliminate it. If the car is still making too much racket, you can enlarge the mounting slots in the body and file the tabs on the chassis until the body is loose.

Q I was wondering if the AMT 1/25 Fruehauf Trailer would fit the AMT 1/25 Peterbilt 352 "Pacemaker Cabover." I have seen pictures of it hooked up with the Fruehauf's "Big Tube," but I would like to know if the Fruehauf Trailer does fit the "Pacemaker Cabover." Also, do they make Bruce McLaren's cars in the 1/25 scale?

Norbert Kumagal

Davis, California

A Yes, they will work very well together. In fact, you can easily modify the IMC Dodge to work with these trailers by reshaping the spindle. I have seen the McLaren cars in the 1/25 scale by a Japanese company. I think it was a Paramount, but don't quote me. As I recall, I passed it by because it looked a bit crude. I understand that a 1/32 or 1/25 scale model will be available for die-cast collectors.

Q Every time I display a model for a length of time, the chrome gets a dull, flaky, tarnished tint to it that ruins the appearance of the whole car. HELP! Its happening to my dual engine gas rail.

Scott Botelho

Fall River, Mass.

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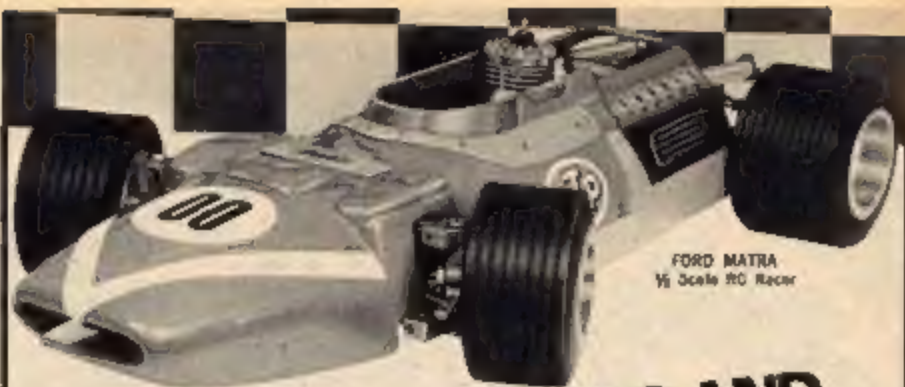
(Please Print Clearly)

A Some of the kits on the market have poor quality on the chrome pieces, and the coats are thin. Some of the better kits have a coating of jewelers' lacquer to prevent the chrome from oxidizing. Jewelers' lacquer dries clear and never yellows. You might try buffing the chrome with a Q-tip swab and cotton balls, and coat the surface with glasscoat or jewelers' lacquer.

Q When building a model car that has two engines mounted, one in front of the other, what is the best way to connect the two? How about some tips on getting the most realistic looking puttying job possible? When a person "toothpastes" a paint job, what does this mean? What could I do to my paint to make it look as "flaky" as possible? Why don't you have the Model of the Month in every issue? How can I raise the rear wheels of a model higher than the kit allows if the axle is molded in with the rest of the chassis? Here's a tip on how you guys can make pretty good looking hood scoops. Dig into the old parts box for a bucket seat that has a pretty flat back. Cut the seat in half between the cushion and back part with a razor saw, Auto-Cutter or similar tool. Sand the back part that you cut off so that the edges are flat and there you have a pretty cool looking hood scoop.

A There have been a few successful twin engine cars, like the "freight-train," that had twin engines mounted inline. Cut off the transmission from the front engine, but leave the bell housing in place. Glue a short shaft from the rear engine to the front engine's bell housing and you're in business.

Body putty, like that sold at hobby shops in small tubes is extremely difficult to work with. Invariably these putties will shrink months after the work has been completed. I've found that epoxy is the best "putty" to use, since it dries hard in two days, never shrinks, accepts paint readily, and is hard enough to sand with the same consistency as plastic. Many of the professional modelers will take a short cut that gives the best results and only takes a few minutes. First of all, take an old soldering iron and flatten the



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QUESTIONS

tip. Next, obtain an old A.C. rheostat from a junk yard and adjust the iron until the tip will just barely soften plastic. Now all you need to do is melt pieces of sprue into the area to be puttied. Wait about two minutes before you start sanding. Naturally, this process takes time to master but the results are very rewarding.

Toothpaste is one of the mildest abrasives you can obtain. The only stuff finer is women's face powder. Many modelers use toothpaste to rub out their paint jobs and eliminate orange peel.

Flaky? I guess you want to give it the appearance of metalflake. The winner of our Monogram contest used the finest glitter he could find. Start by coating the car with clear enamel. Sprinkle the glitter over the wet surface. Finish it off by shooting at least twenty coats of clear over the flake. It's tedious work, but it looks different.

Often as not, the editor is forced to shelve an article to allow room for a more newsworthy article.

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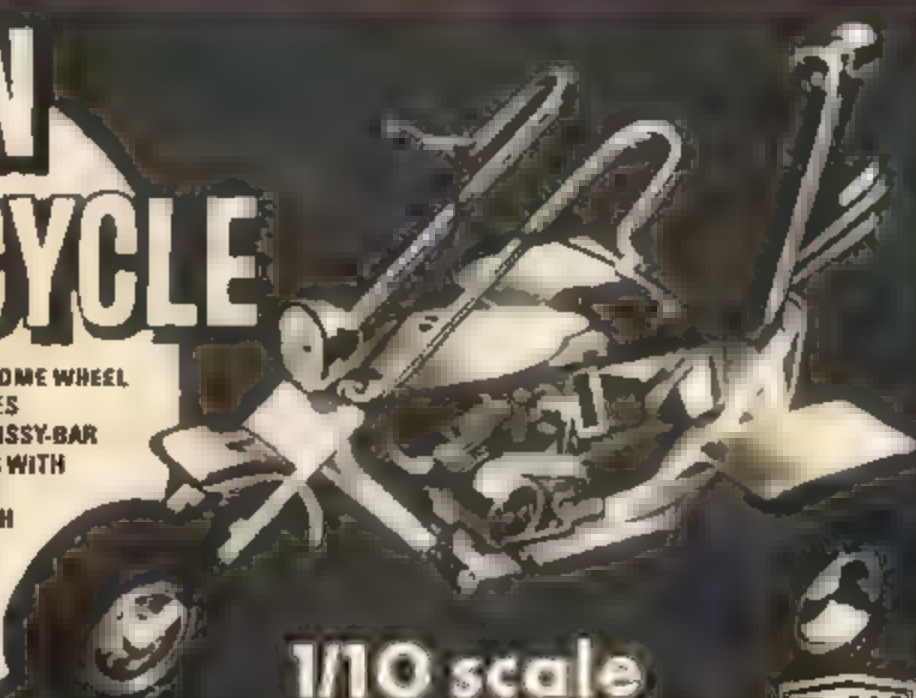
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**1/10 scale
mini trike**

INDUSTRO MOTIVE CORPORATION • TROY, MICHIGAN 48064



ANOTHER
JOE WEIDER
SPECIAL!

SHAPE-UP! MUSCLE-UP! SHOP

BUILD MUSCLES. GAIN WEIGHT. LOSE WEIGHT. EVERYTHING YOU NEED TO

1



MUSCLE UP & MAKE OUT!

PUT MUSCLE

IN YOUR MUSCLES WITH ONE TWIST!

Quickly add up to 2" on your arms, 4" on your chest. Build rippling back muscles. Thick, broad shoulders. The power to lift girls over your head with one arm! One twist of the "007" TWISTER and every muscle in your body ripples with new vigor and power. Builds strong muscles FAST—muscles that make you an action packed guy and a super-charged tiger with the girls! Easy-to-use. No adjustments. No assembly. Use it right out of the box for instant muscle-building fun! Made of chromed steel tubing, the TWISTER is tough, durable—like you'll be! Guaranteed to muscle you up or your money back. ORDER NOW! Only \$9.98

GUARANTEE: If after using the TWISTER 3 days you're not convinced you can quickly twist it for cobra-like muscles in your arms... more muscles on your chest... broader shoulders... wider back... a he-man grip and dynamic power—then return it after 5 days for a full refund, fair! So order the "007" TWISTER Now, while the limited supply lasts! This unusual offer may not be repeated again this year.



FREE!

Complete, illustrated "007" POWER TWISTER Manual. Also, illustrated conditioning course, dealing with the new aerobics training that muscularizes your body with athletic vigor, speed and agility. Written by Joe Weider, Trainer of Champions. Yours FREE with your TWISTER. ORDER NOW!

EXTRA BONUS GIFT: 3 copies of Muscle Builder magazine, worth \$1.80... yours FREE!



PRICED AT ONLY
\$9.98

WITH COURSE

12/Model Car Science

2

This "Killer Karate Krusher" gives you pulverizing hand power!

Just 5 minutes a day for 30 days builds your hands into granite-hard battering-rams of power! Simply fit your fingers into the leather grippers, and with your very first squeeze, you'll instantly start building invincible new power into every tendon and ligament of your hands and fingers!



MAYBE YOU DON'T WANT TO BREAK A BRICK IN TWO WITH YOUR BARE FISTS OR RIP A PHONE BOOK IN HALF—BUT WOULDN'T IT BE GREAT IF YOU COULD?

Here's a brand new way—a fantastically successful system that turns your hands into fearsome, devastating arsenals of power! Based on centuries-old secrets of Japanese Killer Cults and a Space Age hand-building principle, my KILLER KARATE KRUSHER can make you into a two-fisted tank of power able to take care of yourself... anytime... anywhere... in all situations! You'll never again fear any man or turn away from any challenge. ORDER IT TODAY! Only \$9.95 postpaid.

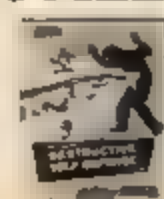
MY GUARANTEE TO YOU: You'll own fearsome, ferocious, crippling arsenals of hand power—and become a "Terror-Fighter," able to take care of yourself in every situation—IN 30 DAYS—or your money back!

GREAT FOR SPORTS, TOO! FEAR NO MAN!



FREE

My "Killer Karate" Course... "The Deadly Art of Hand Fighting." Shows dozens of ways to disarm and counter-attack any man, whatever his size! Yours FREE if you order the KILLER KARATE KRUSHER Now!



PRICED AT ONLY
\$9.98

KARATE KRUSHER & COURSE

3

THE END OF THE SKINNY BODY

Drink on as much as 14 pounds in the next 14 days this delicious FUN way!



BEFORE: James Parker at a thin 150 pounds. **AFTER 14 days on the Crash-Weight Plan, Jim weighed 175 pounds!**

GAINS 14 POUNDS IN 14 DAYS!

HEY YOU SKINNY GUYS! Thousands are doing it every day. WHY NOT YOU? Here's a totally new breed of nutritional "wildcat" drink that's guaranteed to put on and to your hungry-looking, muscle-poor body... through a new, scientifically-blended milkshake-tasting drink. Crash-Weight Formula #7 Plan puts meat on your frame. Fleshes out your narrow, shallow chest, skinny arms and spindly legs. Nobody likes a bag of bones! With my proven Crash-Weight Plan you just drink 4 milkshake-delicious glasses with your regular meals and take in an extra 3500 calories daily to help you pile on the weight FAST! (It's the calories that count when you want to put on some handsome weight!) The nice thing about my weight-gain plan is that it's so easy to take. No complicated exercises to do. No bloating. Heavy-as-lead foods to force into your system. The Formula #7 Plan does all the work... you just sit around, take it easy, be as lazy as you want—and in a few days you'll see measurable weight gains pile up! Check the coupon for the Plan and flavor you want to use to put an end to your skinny body. Guaranteed to put weight on you or your money back.

To add up to 14 pounds in the next 14 days you need:

- 14-day supply of Crash-Weight Formula #7
- 14-day supply of Appetite-Stimulating tablets, and

FREE Weight-Gaining Course. A 48-page illustrated guide crammed with step-by-step instructions in weight-gaining basics. PLUS 3 copies of Mr. America magazine, worth \$1.80... yours FREE!

7-day supply: \$2.00 • 14-day supply: \$14.98

(Your choice of Chocolate or Vanilla Flavor)



PRICED AT ONLY
\$8.00

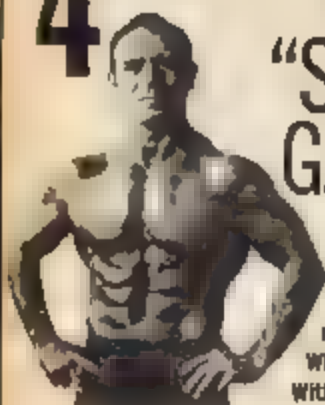
FOR A WEEK'S SUPPLY & COURSE



HERE FOR MASCULINE VIRILITY!

CREATE A NEW, EXCITING AND FUN-GOING YOU IS SHOWN RIGHT HERE!

4 NEW "SLIM-GARD"



3 Inches Off Your Middle, Waist, Hips and Lower Back When You Wear It Without Exercising!

Meet my pupil, **Larry Murray**, age 46. He has a 48" chest, 30" waist, weighs 190 pounds. He's won more than 50 trophies for "Most Muscular Waist" in various "Mr. America" contests. Says Irving, "You wouldn't think that a guy like me could wear the SLIM-GARD, but I do. Every day I possible. It keeps my waist and middle trim and muscular while I wear it. I swear by it. You chubbys will, too!"

SLIM-GARD is the newest, space age way to tone up and trim down your torso. All you do is wear it and it takes inches off your waist. It's fantastic the way it works! SLIM-GARD acts like a waist supporter. It hugs your body, keeping warm air in, cold air out and inducing immediate perspiration. Wear it on the golf course, tennis court, at home, or when you jog. SLIM-GARD won't tear at all! You won't even know you're wearing it. Stretches to approximately 6". Made from the finest, most resistant neoprene rubber. Easy to slip on and off. Has heavy-duty zipper. SLIM-GARD won't tear, rip, or come apart. Available in Small (22-30 waist), Medium (30-35), Large (35-42). ORDER NOW! Only \$11.95.

FREE!

NEW "AEROBICS/CIRCUIT TRAINING" EXERCISE ROUTINE

Combining a slimming, muscle-strengthening and heart-arteries-lung improvement routine to help create a more vigorous you (inside and out).

Follow this enjoyable, easy plan in the privacy of your own room. Slims and strengthens your body in just 15 minutes a day. Stimulates your body to use and distribute your food intake more efficiently—to keep you from gaining weight. Helps you melt off fat where you want it. Reshapes your body to youthful lines. Stimulates your body to use and distribute more oxygen so that your heart, arteries and lungs are strengthened.

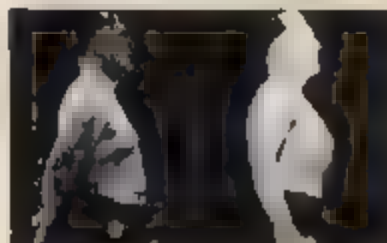
See results within 2 weeks! Tested by thousands with outstanding results! This program is guaranteed to improve your well-being, fitness and vigor in just weeks. And most important, it's an easy-to-follow program you can stick-to-for-the-rest-of-your-life!



SLIM-GARD & COURSE ONLY

\$11.95

5 LOSES 35 POUNDS IN A FEW WEEKS!



BEFORE—Larry Murray was heavier, ght, sick and diagnosed with life. **AFTER**—A few short weeks on the Weight-Loss Plan, he was 35 lbs. lighter and happier!

balance of natural-organic proteins, vitamins, minerals... along with controlled fats and carbohydrates. Follow the plan, drink nutritious, milkshake-flavored RX7 follow the Cardio-Grain "Consistent" Diet and the few simple exercises that come with it. You are guaranteed that within 30 days you'll look more vigorous, be more athletic-looking and more youthful than at any other time in your life. THOUSANDS ARE DOING IT DAILY. WHY NOT YOU?

FREE New "Aerobics/Circuit Training" Exercise Routine. Same course as described in the SLIM-GARD ad.

with emphasis on waist, hips and small of the back reduction. PLUS FREE 3 copies of Mr. America magazine worth \$1.80 yours FREE!

12-Day Supply

\$11.95

(Your choice of Vanilla or Chocolate flavor)



LOSE UP TO 35 POUNDS IN 14 DAYS Without Losing Strength & Vigor

The Only "Weight Loss" Plan that Really Does Something To Shape You Up. Keep Your Vigorous And Athletic-Looking While Losing Weight!

Your skin won't collapse or sag or develop the deep and wavy lines and wrinkles that give you an aged appearance. This is the only plan that puts vigor, power, muscles and masculinity into your body while it slims you. You'll look and feel younger while losing weight safely. Weight Loss RX7 SHAPE UP PLAN is a revolutionary new protein-enriched weight-loss plan. Unlike other reducing plans that make you lose vigor, health and youthfulness, this remarkable drink provides you with a nutritious!

6 SPECIAL OFFER:



- 2-weeks' supply of "RX7" with course.
- 3 FREE issues of Mr. America.

A \$25 value
Now only

\$19.95

USE THIS SHAPE-UP MUSCLE-UP COUPON!



JOE WEIDER

Dept. 248-120 P4

531-32nd Street
Union City, N.J. 07087

THANKS

Thanks for letting me know about your "Shape-Up" - "Muscle-Up" courses and products. Please send me the items checked below, along with my FREE gifts. I understand all your products carry a full money-back guarantee... no "ifs" "ands" - or "buts."

I enclose check or money order for \$. . .

NAME _____ AGE _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

- ☐ "007" TWISTER, Free course & 3 copies of Muscle Builder magazine only **\$9.95**
- ☐ MILLER KARATE KROSHER & Free "Killer Karate" course only **\$9.95**
- ☐ CRASH-WEIGHT FORMULA 27 PLAN with Free course (check one):
☐ 7-Day Supply only \$ 8.00
☐ 14-Day Supply only \$14.00
 Check flavor desired: ☐ Chocolate ☐ Vanilla
- ☐ SLIM-GARD & Free "Circuit Training" course & 3 copies of Mr. America only **\$11.95**
 Check waist size: ☐ Small (22-30) ☐ Medium (30-35) ☐ Large (35-42)
- ☐ WEIGHT-LOSS RX7 Plan with Free "Shape-Up" course. 2 weeks' supply only **\$11.95**
 Check flavor desired: ☐ Chocolate ☐ Vanilla
- ☐ SPECIAL OFFER: 2 weeks of RX7 Plan, Free "Shape-Up" course and Slim-Gard. \$25.00 value only **\$19.95**



HEATHKIT'S "SPECTRE"

With the addition of a few simple parts (costing only a dollar or two) and some simple "screwdriver and pliers" tricks, you can transform Heathkit's "Spectre" into a sweet little machine which will literally eat out of your hands.

Here are some of the major improvements that you can make: 1. By introducing "caster" into the front end, the car can be made to run in a straight line, or in a very evenly sweeping turn instead of running erratically. 2. By placing the gas tank in the rear and adding a vent line, all the mess of adding fuel to the tank is eliminated and concentrated to the rear part of the car. This keeps the rest of it quite clean. 3. By repositioning the receiver, battery and fuel tank, you will add more weight to the rear end and thus prevent spinouts. If you feel ambitious you can drill lightening holes in the chassis too. 4. By adding a Dynamic "throttle over-ride device" you can blip the throttle without the use of the radio. You will appreciate this every time you tune the engine in the pits. 5. By dressing up the cockpit, cutting out all windows and adding a "driver," you make your car conform to the national racing rules so that you can enter sanctioned races. 6. By repositioning the antenna you will prevent the radio from tipping over when not in use. The vertical antenna also beams out a better and more reliable signal, and you will avoid poking somebody's eyes out, which could easily happen if the antenna were in the horizontal position. 7. By using a steering wheel instead of a tiller, most beginners learn to drive cars faster and in a

shorter time. This, and other benefits can be yours if you read on.

BY GEORGE SIPOSS

shorter time. This, and other benefits can be yours if you read on.

You can also add other accessories to the car such as exhaust stacks, air filters, etc. For more information write to one of these companies: Dynamic Models, Dept. MCS, 13309 Saticoy St., North Hollywood, Calif. 91605, and R/C Components Mfg., Dept. MCS, Box 161, La Mirada, Calif. 90638.

I found Testor's PLA paints to be fuel proof.

The Heathkit car and radio (the engine as well) can be purchased from the Heath Co., Benton Harbor, Mich. 49022.

For national competition rules, racing clubs and race dates write to: Radio Operated Auto Racing (ROAR), 2855 Velasco Lane, Calif. 92626. Their rules specify that no bigger than "19" engines (.2000 cubic inch displacement) be used and that there be a driver in the cockpit. The car must have an open or transparent windshield and rear window. For fuel you should use any "R/C" fuel made especially for radio controlled engines which need cooling to idle reliably. Run your car on smooth and very clean parking lots. Cement school yards are too slippery. Join a club or form a racing club and have a ball R/C racing!



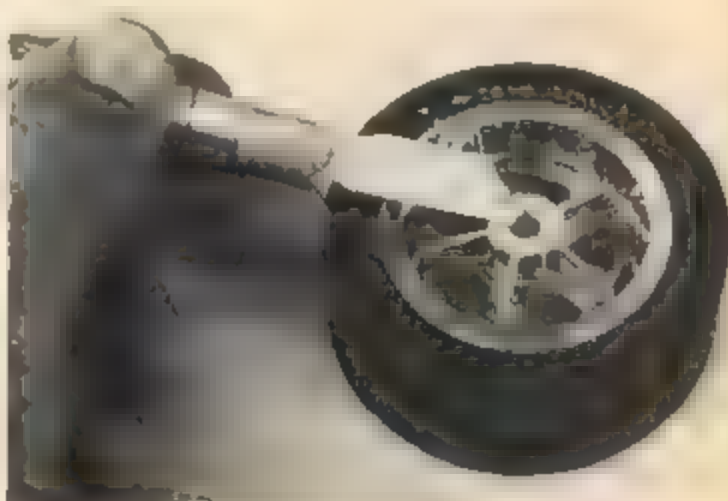
In order to lighten the front end of the car drill a lot of holes in the bottom of the chassis under the radio compartment.



Loosen the two screws which hold the suspension bracket to the chassis sides. Swivel the bracket so the kingpin bottom points forward just like a bicycle front fork



Note that the kingpin bottom points forward. This is called "caster angle" and ensures that your car will run in a straight line without a need for constant correction on the steering wheel



Tighten the front axles securely. If the wheels bind up, remove some plastic from the wheel hub with an X Acto knife or file. Oil does not have to be used on the front wheels



The gas tank has three fuel lines. The one on top is used for filling. The middle one is the vent (runs diagonally), which is not shown in the Heathkit instructions. Lowest line takes fuel to the engine.



Drill two holes in the rear of the chassis, wrap the fuel tank in foam rubber and mount it (using plastic straps or bailing wire) on the chassis behind the engine. Note vent line on bottom.



Top view of the fuel system. You should use a fuel filter in the fuel line leading to the engine. The large plastic drive gear should be boiled in water (with glycerin added to it) to make it strong.



Mount a piece of sheet metal (beer can material or sheet aluminum) on top of the fuel tank so the exhaust gases will not damage the foam. Reverse the screws in the carrying handle to make room for the fuel tank.



Mount the heatsink on the engine to keep it cool. You should also mount an air filter over the carburetor air intake. Fuel filler line is seen pointing straight up, it has a rubber tubing on it for easier filling.



The throttle linkage should be made from a Dynamic over-ride, to permit free revving of the engine without the use of the radio. Your finger, placed against the bellcrank, can actuate the throttle to clear the engine.



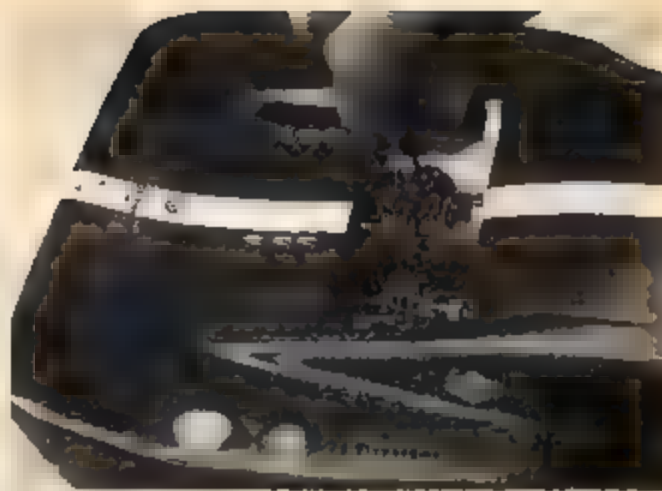
To make engine "blipping" even easier, simply mount a screw on the arm of the bellcrank. During starting procedures your finger will be conveniently in position to move the bellcrank to rev up the engine.



Rearrange the components in the car so the receiver is up front and the battery right next to the throttle servo, wrapped in foam. Since the gas tank is in the rear, this puts most weight on rear tires.



Paint a small red dot on the "ON" side of the radio switch to remind you or your pit man which way the radio switch is turned on. In a hot race you may forget!



Cut the windows with an X-Acto knife or similar. Make the necessary adjustments to the carburetor through the rear window. For the first tuneup runs you should run the car without the body, but for racing and demonstrations you must have a body.



Now that the car is finished, let us make the radio easier to handle for serious racing. Begin by moving the "RF" board close to the chassis panel (use cardboard insulation) to make room for the relocated antenna, which is now next to the meter. Drill a hole about 3/4 inch from the meter and mount the antenna in it. This makes the antenna always vertical, prevents the radio from tipping over and also prevents accidents.



Makes a simple bracket from 1/16" thick aluminum and mount the steering "pot" on it. Drill a 5/16" diameter hole in the face of the transmitter to allow the pot shaft to extend through it. This will make it possible to mount a small knob on the steering pot shaft which will then serve as a "steering wheel." This makes it easier to drive. Radio wiring is not disturbed at all. The trim lever of the steering pot now extends through the side of the transmitter. You have to cut out a little bit of material to provide enough room for the trim handle. This picture shows the transmitter just prior to assembly.



Note the "steering wheel." The previous steering tiller slot has been covered up with one of the decals in the kit. Antenna extends vertically, trim lever is on the side. This is the proper position to drive. Throttle and brake are in the conventional position on the left. Right index and thumb do the steering. Antenna is always vertical so you don't poke an eye out.



Use an overturned bicycle's rear wheel to start the engine. Right hand index is used to "blip" the engine during starting, even if the radio is not turned on. Rough up the tires and keep them clean for best traction.

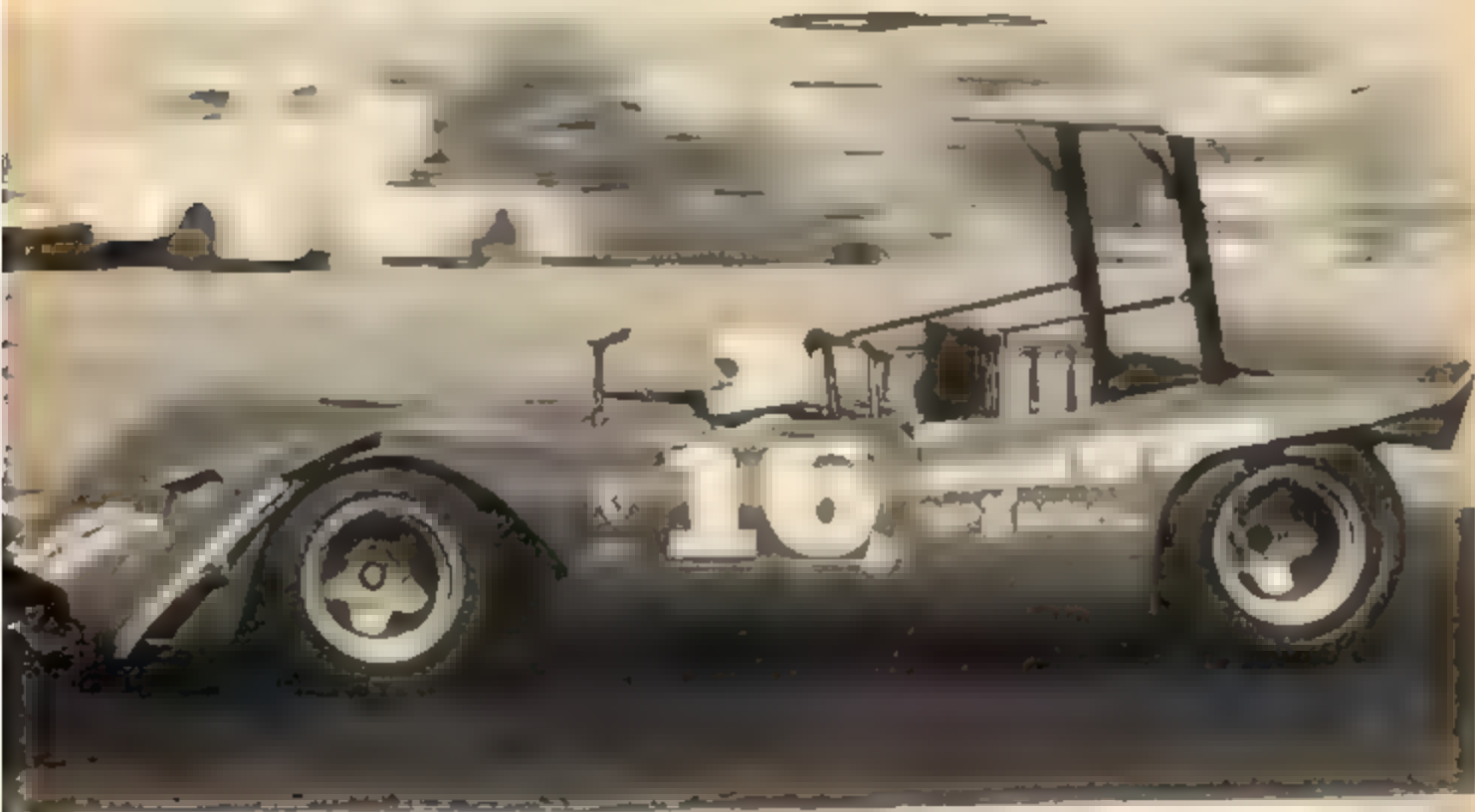


And away we go! Holding the transmitter in your hand in a relaxed position, practice with the car. First, learn steering only at an even speed. Next, drive the car around you. Next, learn to use the throttle. Only after you have learned to drive the car slowly around you should you try to drive the car from the outside of the track. You should always imagine that you are in the car. Left is left, right is right.

BASIC TUNING TIPS

It costs very little to field a competitive slot car. Here are a few simple steps which you can run through in a few minutes time, and which will net a great deal of performance for no cash outlay.

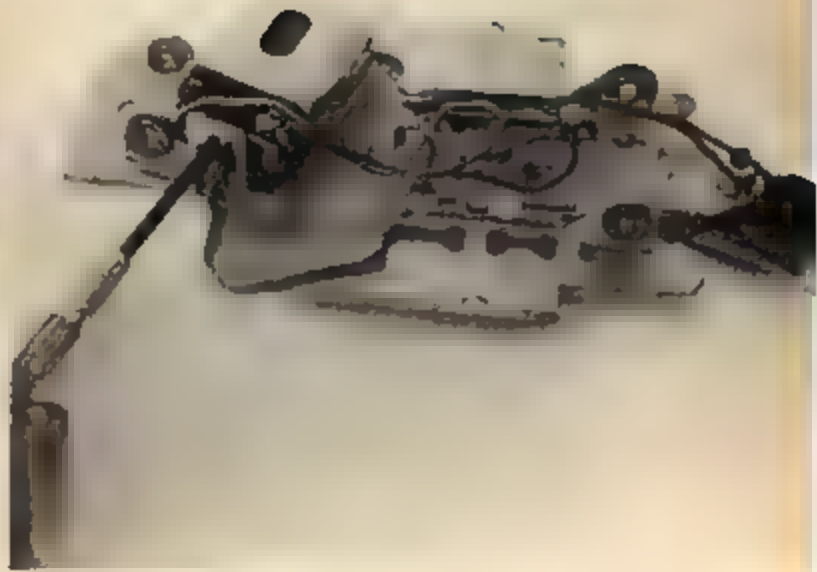
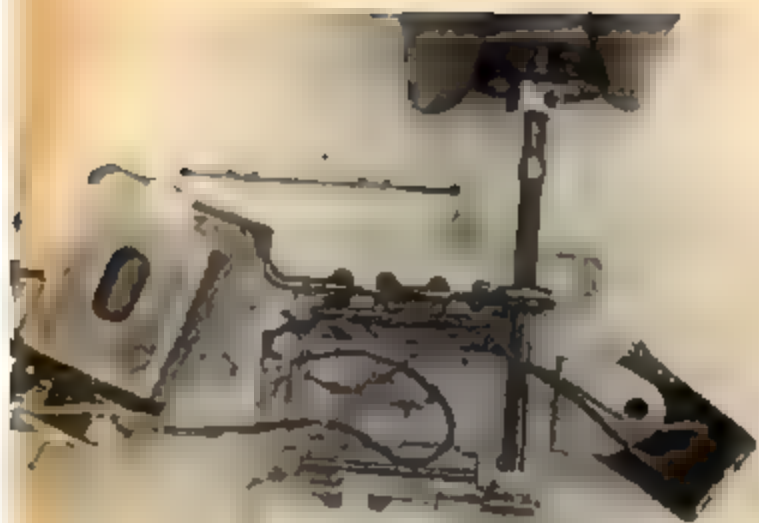
Dynamic Models' great 1/32 ready-to-run car provides the basic machine. We provide the tips and YOU provide the desire.



Chris Amon's Can-Am Ferrari exits Riverside Raceway's turn eight in the October, 1969 Times Grand Prix. Photo by Bob Tronolone, courtesy Road & Track.

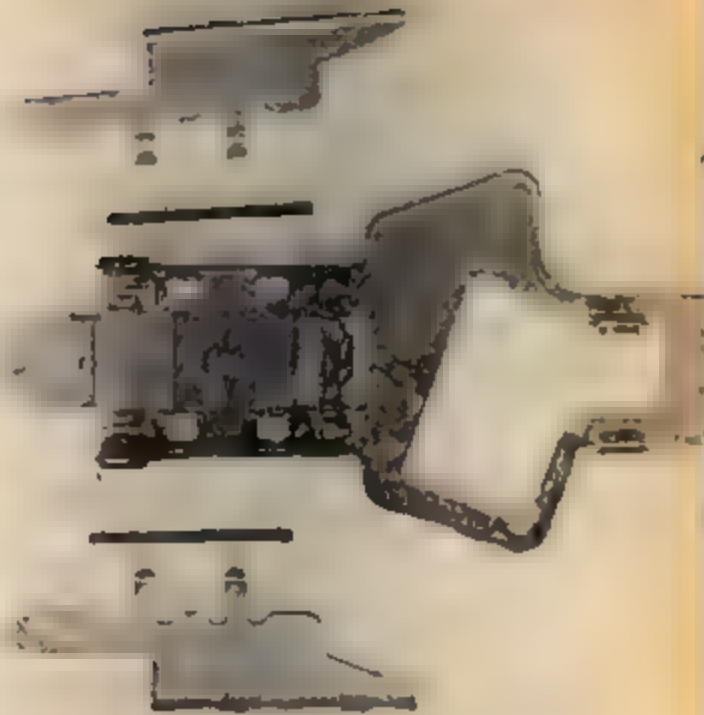
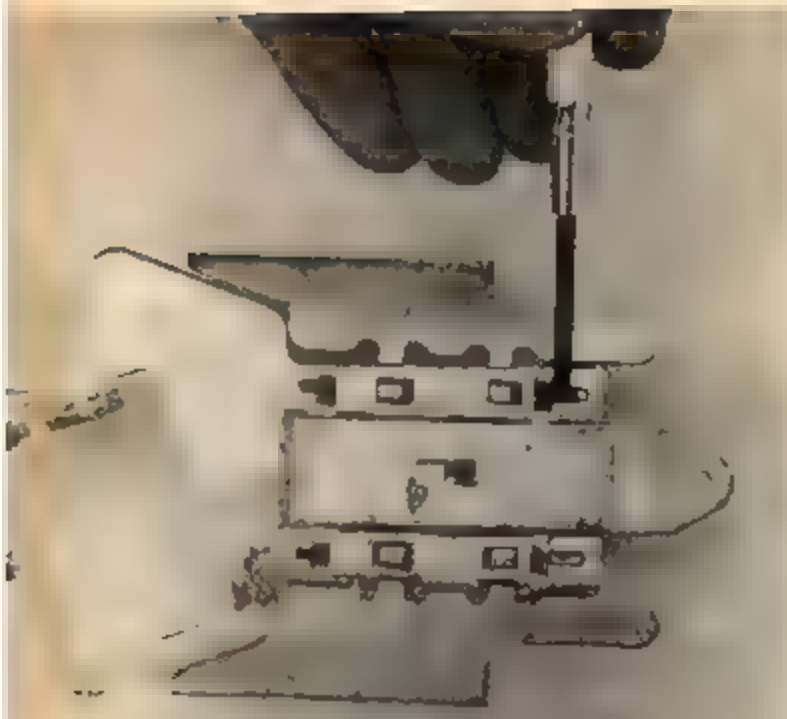
Here's Dynamic's beautiful 1/32 scale ready-to-run Can-Am Ferrari anglewinder - an ideal home or club racer. It's easy to make a good thing better with almost no outlay except a bit of your labor. Begin by popping the body mounting clips off and removing the body.





Disassemble the chassis completely, noting how you take it apart. Jot it down or draw a rough sketch of the chassis if you have a poor memory. All you have to do is loosen the set-screws and slip the front axle out of the axle holes. Then remove the guide shoe, loosen the gear and the set-screws on the rear wheels and slip them off. Finally, take the motor out of the chassis.

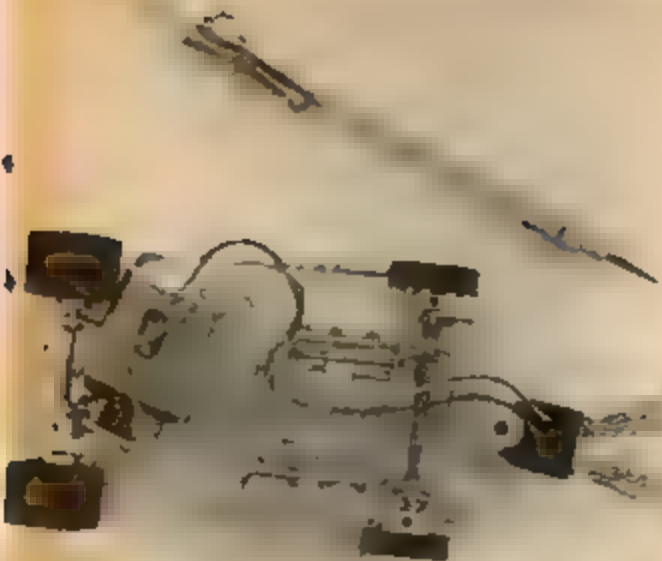
To make the axle turn as smoothly as possible (thereby cutting down on friction), smear them with toothpaste, chuck them into a drill and slide the axle into the wheel bearings. Turn the drill on and "hone" the bearings and axle at the same time. This "mates" them together beautifully, making them extremely smooth.



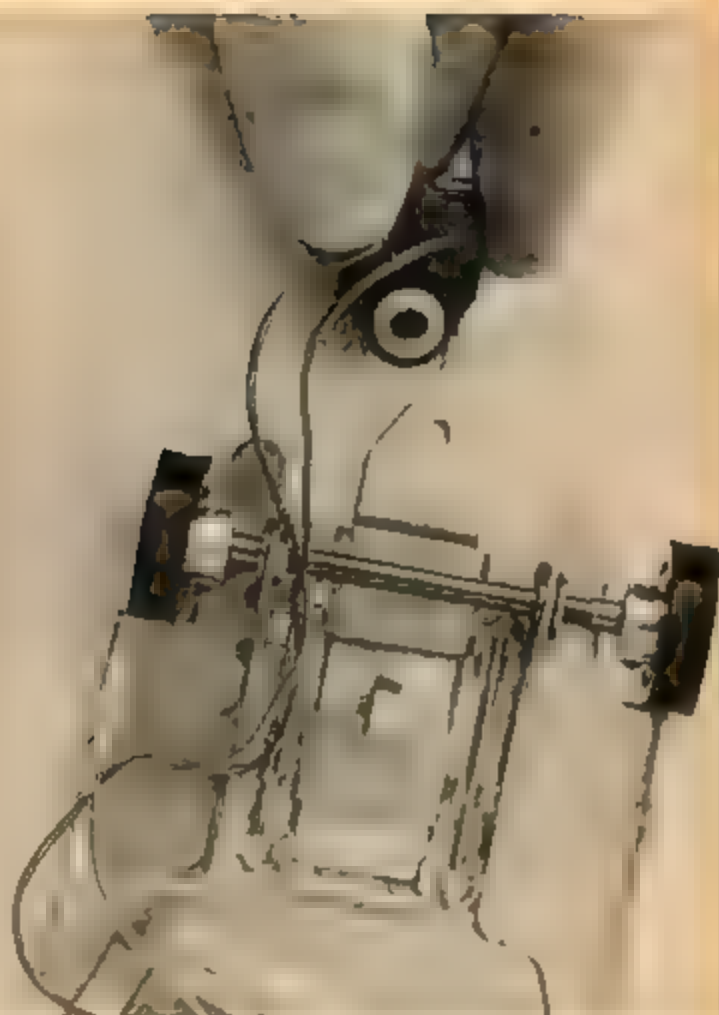
Do both the front and rear axles with toothpaste. Don't bother cleaning them up yet, as the entire chassis needs a good cleaning. Note the discolored frame. This is common on brass kit or ready-to-run cars. It's easy to eliminate and makes the car look 100% better. Pry the retaining tabs up that hold the piano wire pins which act as pivots for the floating "bat wings." Slip the piano wire out. Here's the way it should look.

Set the disassembled frame and bat wings aside for the moment. Chuck the tire/wheel/axle combination in a drill, as shown here, and remove the "burrs" around the outer edge of the tire. Round this edge off slightly. You can do the inside too, just a bit. As the wheel turns in the drill, the emery board (a normal, fine grit fingernail emery board does the job nicely) buffs the tire smooth. This eliminates wheel hop and gives you faster lap times.

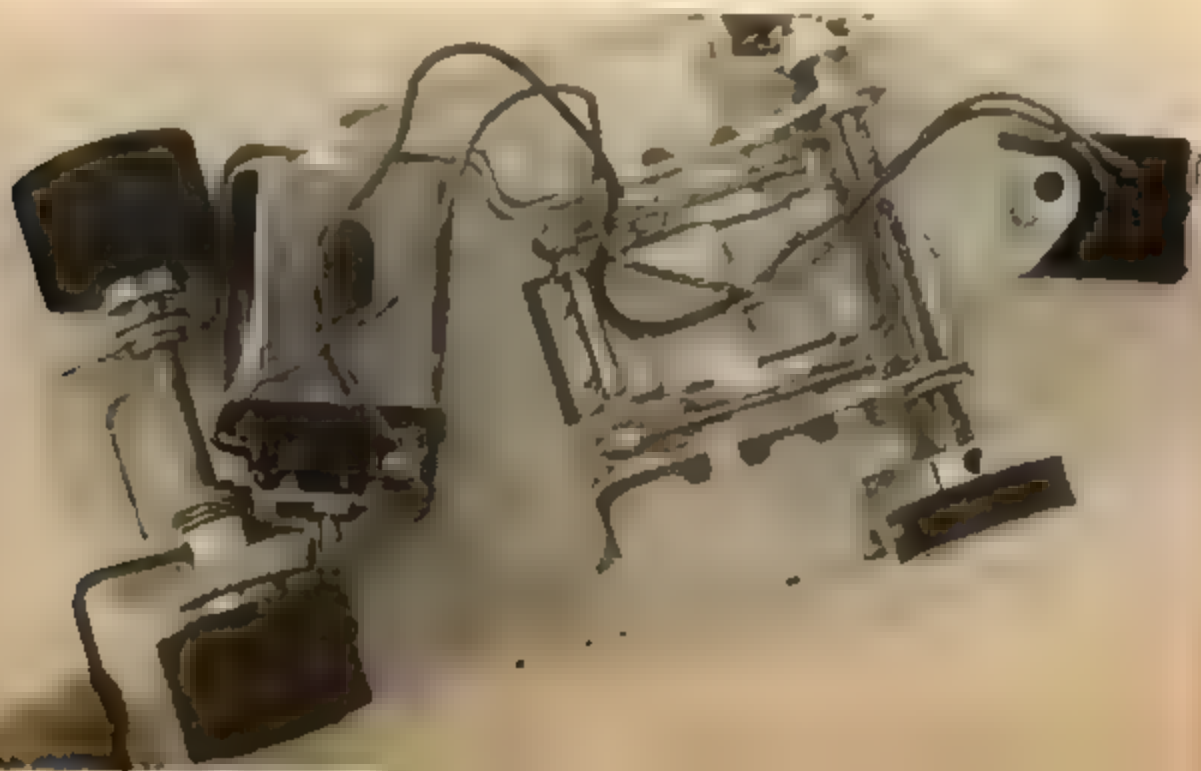




Thoroughly clean the chassis in hot water (as hot as you can stand to get your hands into) using a Brillo or S.O.S. pad. Buff away any corrosion, stains, etc. Rinse in hot water and dry thoroughly. Do this to all axles also (to eliminate dirt and toothpaste residue). When everything is completely dry, wipe all metal parts over lightly with an oiled rag, then buff completely dry with a clean, dry rag. Reassemble the chassis to the point shown here. Using a sharp pointed tool (the end of a file, an X-Acto knife blade, etc.), "pick out" the woven pickup braids. You should end up with pickup brushes like you see here. Brush them with Champion's wire brush, if you have one. Otherwise, just brush them out with a steel brush of any kind. This "softens" the pickup brushes. Fold them back under the flag, as shown. To place the blade of the pickup shoe as deeply into the slot as possible, which helps road-holding, place a 1/8" inside diameter washer over the shank as shown here. This acts as a spacer between the shoe and the frame. Add as many as necessary to place the shoe as deeply into the slot as you can.



Make sure the gears mesh properly. Loosen the set-screw, move the gears close together, and back off a bit. Cinch the set-screw down. Turn the wheels with your fingers. There should be precious little "slop," and the wheels should move smoothly with no noise. When this is accomplished, place a drop of oil on each wheel bearing, on the motor shaft bearings at each end of the motor, and a drop or two on the gears. Also, don't forget to oil the bat pan hinges.





Here's the bottom view of the chassis. Note how clean and bright it looks. Everything now operates smoothly, and none of this costs you a single cent! You'll notice a definite improvement in handling and lap times.



We may as well make the body look better, too. Trim around the edges of the decals with a sharp X-Acto knife to remove that filmy edge that always spoils the looks of decals. Moisten the decals in warm water and slide them onto the body, where you want them. Biot them down with a towel, to work out the air bubbles. Allow them to dry. Trim out the excess plastic in the cockpit area.



Mount the driver platform with Scotch tape, from the inside of the body. Now mount the body to the chassis, using the clips provided. Here she is, ready to race. Make certain the body doesn't bind anywhere.

WIN A \$500 SAVINGS BOND

\$500

Groove on this: all you have to do to win the fantastic array of prizes described on this page, is to use your imagination. a 1/43 scale car (pick from dozens of manufacturers' cars such as "MATCHBOX," Corgi, etc.) and a 1/20 scale engine, such as the ones you'll find in MPC's great big scale series.

Okay, you've got a b-i-g engine and a s-m-a-l-l car. Now, graft the two together, somehow, and then start doing your magic tricks. Customize until you're just plain customized out.

The wildest cars will be the winners. Don't send us the actual cars, however. Send us photos only (the rules are explained, fully, on this page).

There's a lot to shoot for — so shoot! The deadline for entries is January 20, 1971, so better get a move on!



Can you do better than this? If so, you might win a lot of gold. This is one of the MPC "Zingers," the newest rage in way-out cars.

CONTEST PRIZES

FIRST PLACE

A \$500 U.S. Savings Bond

One of every new MPC model car kits for a full year

A Lionel train set

12 flying model rocket kits

SECOND PLACE

A \$100 U.S. Savings Bond

One of every new MPC model car kits for a full year

A Lionel train set

12 flying model rocket kits

THIRD PLACE

A \$50.00 U.S. Savings Bond

One of every new MPC model car kits for a full year

A Lionel train set

12 flying model rocket kits

FOURTH PLACE

A \$25.00 U.S. Savings Bond

15 MPC car kits

A Lionel train set

12 flying model rocket kits

FIFTH TO TWENTY-FIFTH PLACE

10 MPC scale model kits

A one-year subscription to *Model Car Science*

A. This contest is open to all modelers, the world over, except for employees of Model Products Corporation and Model Car Science, and their families.

B. Your entry must use a 1/43 scale body (any manufacturer's) and a 1/20 scale engine (any manufacturer's). These are the only restrictions; you may customize the car in any way, shape or form.

C. Send one or more black and white

photos (any size) to us for judging, but DO NOT send the model itself. Include a brief description of the car, what has been done to it, and your complete name and address. Send to: MPC Contest, *Model Car Science*, 131 Barrington Place, Los Angeles, California 90048.

D. Send as many entries as you wish. We will select only the best one for an award, and you may not win more than one prize.

E. Entries will be judged on originality

of design, workmanship, paint, and overall finish.

F. This contest is void in states where prohibited by law.

G. No photos can be returned. Your entry will act as your permission to allow Model Car Science and Model Products Corporation to use photos of your car for advertising and promotional purposes.

H. The deadline for your entry is midnight, January 20, 1971.

February 1971/23

THE BASICS OF RADIO CONTROL AUTO RACING

A look into a fascinating
new hobby/sport

BY GENE HUSTING

I know you've probably read or heard something about this fantastically exciting new sport, radio controlled (R/C) model car racing, and if you've just about made up your mind to try it, maybe I can help you. This is the ideal time to begin because the sport is just now starting to grow by leaps and bounds. By starting now, you'll be on an even break with about 95% of the guys you'll be racing against, and hopefully with the help of this article and others, we can help you get to the top of that 95% group. Although the 1/8 scale R/C cars actually existed about six years ago, being started by George Siposs and Norb Meyer, active participation didn't begin until about three years ago, but during 1970 the sport came into its own. The Los Angeles area has two active clubs at the present time, the Orange County R/C Auto Racing Club which has been in existence for almost three years and the San Fernando Valley R/C Auto Racing Club which has only been in existence for nine months but already has over 50 members. There are active clubs and racing programs in most of the major cities around the country. By inquiring at your local hobby shops, you'll be able to be informed of the location of the clubs or races being held in your area. If you're in an area where R/C car racing has not yet started, post a notice on the bulletin board of your local hobby shop stating that you'd like to join or start a club. This way you'll be able to get in contact with other people in your area who also want to race R/C cars.

By now I know some of you

readers are asking what Gene Husting knows about R/C cars. He's a slot racer. Well, a year ago I knew absolutely nothing about R/C cars until I went to an R/C race. At the first race I saw, I knew I had to try this new sport. At the time, there were perhaps a half-dozen companies manufacturing R/C car kits. And all the kits were different. I fell in love with one car and almost bought it the moment I saw it. It looked like a scaled down Can-Am car complete with four-wheel independent suspension, torque converter and inline engine, but I thought I'd better make my final decision on how the cars performed on a track rather than how it looked on the shelf. At the next Orange County race, there was a car that won the main with ease. It had straightaway speed like some of the other fast cars but it had better handling than any other car there. It was a Delta Dash II being driven by Bill Campbell who, together with his brother Ken, owns Delta Products, makers of the kit. This seemed to be exactly what I was looking for. After the race I spent a couple hours with Bill while he was trying out some new foam tires on his car. Bill asked if I wanted to drive his car. Did I! I told him I'd take it real slow and easy. I managed to drive it around the parking lot for about five minutes without hitting any lightposts or curbs. Then I brought it into the pits and let off the throttle expecting it to stop as we do with the slot cars, but it kept coasting right into the curb! Hurt! Luckily it wasn't going fast enough to damage the chassis but it did tear the front of the body. Did I feel bad — but Bill was happy it didn't hurt the chassis and said the body was easily repaired. He even offered to let me drive it again but I wouldn't chance it!

There is no way to compare slot car racing to R/C car racing. It would be like trying to compare slot car racing to go-kart racing. It's just two entirely different types of racing. In slot car racing, you've got five seconds to make one lap which could consist of five or more turns, a doughnut or some esses. In R/C car racing, you've got about 15 seconds to make two turns and one esse — sounds easier, right? But one is just as hard as the other. With slot cars, it's punch and brake, punch and brake, if you have a fairly good reaction time you could be a good slot car driver. With R/C cars, two different factors enter in. Besides punch and brakes, you also have to steer the car. Sounds easy enough, right? To make it more fun there are no lanes in R/C racing — it's run on a first-come-here basis. There's no way I'm going to say slot car racing is harder than R/C car racing or vice

versa. Each sport is entirely different and one can be as competitive as the other.

After receiving the Delta Dash II car, which I had ordered from Campbell, my racing success in R/C cars has been phenomenal. Now I'm not trying to tell you I'm some kind of super-star because I'm as amazed at the results as everyone else here. Let's take a look at my first five R/C car races to date, with the Delta car.

ORANGE COUNTY

3rd qualifying — 1st main

SAN FERNANDO

1st qualifying — Track Record 16.5

1st trophy dash — 1st main

ORANGE COUNTY

1st qualifying — Track Record 15.5

1st trophy dash — 3rd main

SAN FERNANDO

2nd qualifying — 2nd main

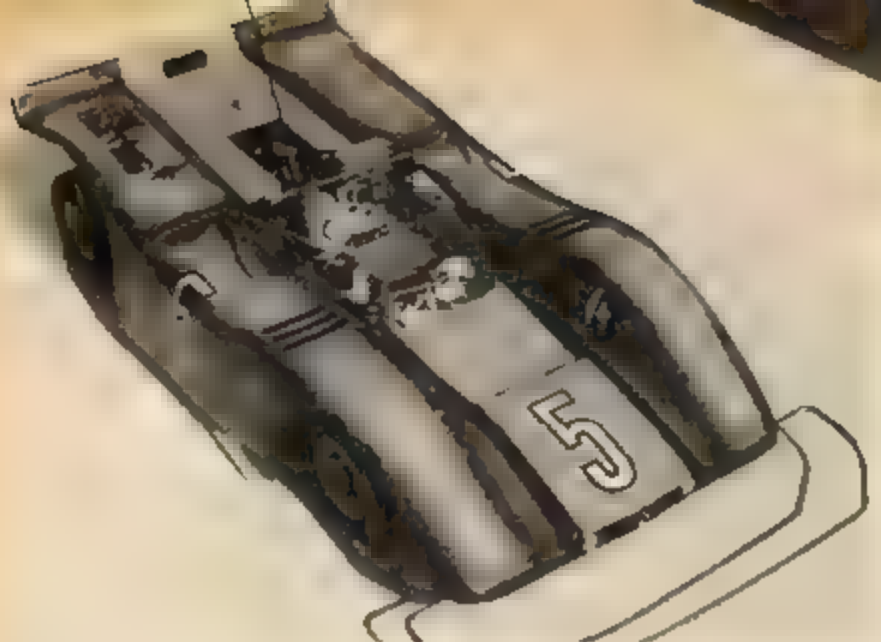
ORANGE COUNTY

1st qualifying — Track Record 15.2

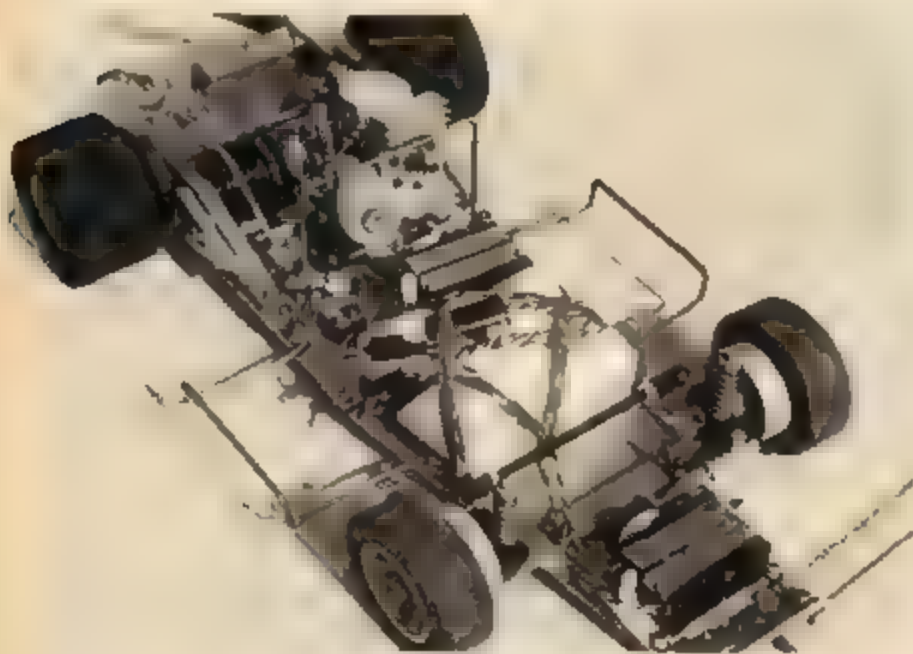
1st trophy dash — Race ONF

After winning the main in my first R/C car race, it was quite unbelievable to everyone — including myself. I might be considered an above average slot car driver, but hardly one of the pro "jet set." So actually my success has been very encouraging for a great many would-be R/C car drivers. They figure "If he can do it, I know I can do it," and they're absolutely right.

Let's get down to all the "super speed secrets" that must have been the main ingredient, then, in my success. Well, I'm sorry to disappoint you, but being new at the game, I don't know any speed secrets. But I will tell you everything I've done and why I did it. To start with there were three requirements I wanted in my R/C car and it was very important they be in this order of importance: (1) reliability (2) handling, (3) speed. All three are important, and maybe you'd rate them in a different order, but not me. Even being an old time drag racer, I had to put speed down at the bottom of the list. I'd say that at all the R/C races I've seen, including the ones I spectated at before I started racing, about 50% of the cars that were at the track were in the pits a lot of the time while their race was being run. I've seen the slowest, worst handling cars win races, simply because the jet cars were in the pits trying to figure out why their motor died when they spun out, or why their linkage came off when that other car hit them, etc., etc. In looking for the ideal R/C car, I found one that would rate very high on the reliability list. It was built like a steel battering ram with an indestructible body and it had fair speed.



Radio control model car racing in 1/8" scale is the fastest growing new sport to hit the country. This is model car racing with the realism, appearances and problems closely resembling the real cars. Dynamic's McLaren body is used on this Delta Dash II chassis. Driver and panel have been removed to show relative engine location. Body has an overall length of 18" and width of 10". Note antenna wire for radio reception sticking up from cockpit area. Bumper on the front of car is a must for beginner drivers, could be removed later.



One of the best commercial chassis available is the Delta Dash II. The Delta car won the manufacturers trophy in the midwest Series 70 and was also high point car in the manufacturers class at the 1970 R/C car Nationals. This is a fantastic achievement. The primary reason the car is capable of this type of performance is because of its exceptional reliability, handling and speed. The front end is fully adjustable for the toe-in, caster, spring rate and shock absorber dampening action. Steering servo is mounted in forward part of chassis. Radio receiver and batteries are mounted in foam and secured to chassis with rubber bands to protect components from shock and vibrations. Servo right in front of engine actuates throttle and brakes. Delta fuel tank and air cleaner are a must on any engine. Bumpers on the side of chassis are to protect that fragile and expensive radio gear.

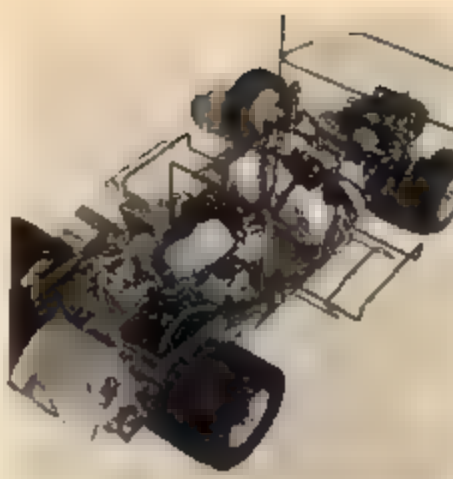
But as far as handling goes, it would spin out at the first corner you came to. Other cars that handled fairly well, and had pretty good speed, were too fragile to be very reliable.

There is no such thing as a perfect car. You can find fault with any R/C car. They're all made on compromise decisions. But the Delta Dash II car rated the highest in all three categories. It has one of the strongest front ends made, adding to its reliability factor. It weighs in at five pounds, which together with its full ball bearing clutch and rear end assembly assures exceptional speed. Delta's foam tires, sidewinder configuration and fully adjustable front end make for one of the best handling kit cars I've seen.

Bill Campbell is an aeronautical engineer and his brother Ken, an accomplished machinist. The engineering and machining on every part in the kit has been well thought out and every part is a perfect fit. This kit sells for \$99.50 from Delta Products, Dept. MCS, P.O. Box 754, Bridgeton, Missouri 63042. If you'd like a little more information on their products, send them a dollar and you'll receive a 38 page catalog on R/C car equipment. It's the largest catalog on R/C cars in the industry. The car comes with an 18 page assembly and chassis tuning book. The instruction book is a carefully well thoughtout guide to assembling the car. If you can read, you'll have no problem assembling the car.

One tip on the front end when you assemble it, as a starting point, put two adjustment washers under the two forward mounting screws between the front end cross bar (that connects the L.H. and R.H. assemblies together) and the chassis pan. I believe their earlier drawing shows this bar mounted under the pan but it should be mounted on top of the pan. This will lower the front of the chassis about a quarter of an inch. The washers will give you more caster. Be sure to adjust in 3° or 4° too-in. The spring rates are adjustable and you'll be able to set these for the type of surface you run on. You'll be amazed at the different amounts of traction on various parking lots. There is one other critical assembly point, and that's installing the engine. The kit does not come with an engine (most kits do not include an engine). The ROAR rules limit the size of the engine to .200 cu. in. The best engine available at the present is the Veco BBRC 19. The crankshaft is double ball bearing mounted for long life and high r.p.m.'s and it will put out all the horsepower you can use. The initial assembly of the engine in the Delta Dash II is done as a unit with the rear section of the

Veco 19 engine is mounted sidwinder style, which is the accepted standard now. Delta clutch incorporates double ball bearings which greatly accounts for its exceptional long life. Chassis also includes ball bearings for the rear axle which add up to greater speed and longer life. Sullivan plastic 40Z fuel tank with Du Bro filter is used. Delta uses a rubber tube exhaust system which looks odd but it sure does the job. But the big news on the rear of the chassis is the Deltafoam tires. These come in soft, medium and hard composition and different wheel widths to give you the best possible traction on the surface you'll be running on.



The newest star on the R/C car scene, Associated's RC 1 will be covered in Part II in the next Model Car Science, along with tips on installing your radio gear, trackside tuning, spoilers and wings and an easy modification to your radio transmitter that will guarantee you quicker lap times.

chassis to the pan. This is thoroughly covered in the instructions, but I want to impress on you the importance of aligning the ball bearing in the fly-wheel and the ball bearing in the R.H. frame member for the pinion shaft. When these two bearings are properly aligned, the pinion shaft should just about fall in or out of the two bearings by it's own weight. I spent at least an hour aligning the back end of the chassis, but it's well worth the effort. You get a freer running, faster car that uses less fuel.

I must confess that I spent more time assembling my car than what you might with yours. I had ordered one of the new Orbit Cobra radios designed expressly for R/C car racing. This comes with a steering wheel which I find is more of a natural feeling than

the sticks that are used in R/C model airplane flying. The Cobra was not yet in production so I had to wait about three weeks for it. This time was then spent in assembling the car and breaking in the Veco 19 engine. Along with the car kit, I also ordered from Delta their heat sink, exhaust system, air filter and Sullivan plastic fuel tank with DuBro filter. The Delta heat sink is one of the most efficient available. They take the stock Veco head and mill the fins off so the heat sink has a maximum amount of heat transfer area between the head and heat sink, which keeps the engine running at a cooler temperature. The Delta air filter does the best job of cleaning the air and still allowing enough air volume to reach the engine. No matter what kind of car you choose, a Delta air filter is a

must. DO NOT attempt to run your car with any type of cleaner other than the Delta type. Wire mesh, steel wool, nylon stocking material, etc. are not acceptable cleaners. They'll keep the rocks out but the dust will still enter the carburetor and in about two hours running time, your motor will be ruined. The dirt will act like sandpaper causing your engine to lose compression and power.

There are many acceptable methods of breaking your engine in. As I said, I had plenty of time, so I installed the engine in the chassis with the heat sink and fired the engine up and ran it at a fast idle for about a minute with a fan blowing on the heat sink. When the heat sink got hot to the touch, I stopped the engine and let it cool off. Then I repeated the same sequence over and over again. I had the fuel mixture set very rich to help cool the engine during break in. At first, it would hardly idle. Then, as it began to break in, it started to idle. The idle rpm would increase after a time as the engine loosened up. All of the breaking in and practice sessions were done using K&B Supersonic 100 R/C fuel. This is a mild fuel with about a 10% mixture of nitromethane in it. K&B, Cox and others make racing fuels containing about 40% nitro which will really make your Veco 19 hum and you can always add more nitro to bring the percentage up to 65% and your Veco 19 will really scream along.

Now I can just see your eyes lighting up saying, "tell me more." Well, I'm going to do just the opposite and tell you to forget about the hot fuels for awhile. If you get a good car, set it up right, and break the engine in right, the K&B Supersonic 100 fuel will be all you'll need for awhile. I know you're probably going to find that hard to believe at first, but consider this. Recheck that list of performances of my first five races. All those races, including the track records, were run on K&B Supersonic 100 fuel! The fastest cars here were no more than two or three feet faster down the straight than mine, but they were losing three feet or more in every corner they came to. Great handling is a much better asset than great speed. I know in time you're going to run the hotter fuels, but do yourself a great big favor and don't try to start off using the hotter fuels.

Next month, in Part II, we'll tell you how to install your radio gear the correct way how to track tune your chassis, the advantages of foam tires and we'll have the reports on that fantastic new R/C car on the market, Associated's new lightweight jet - the RC-1.

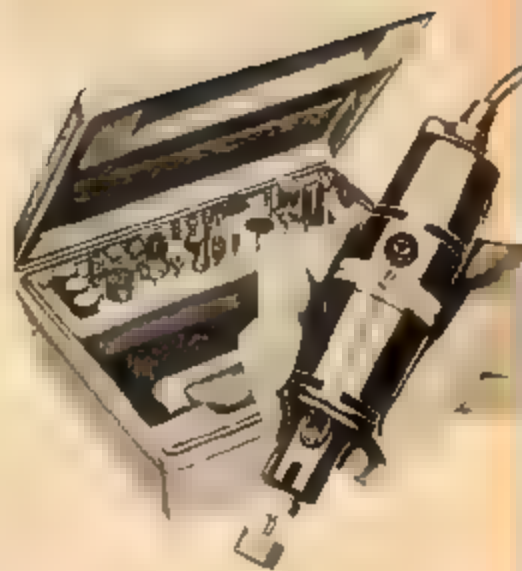
Model of the Month

Each month we receive tons of letters (pounds? Ounces?) and photographs pertaining to the Model of the Month. There are a number of things that you, the entrant, can do to simplify our task.

1. Address the letter to "Brick" Price Contest Editor 11795 Gateway Blvd. No. 3, Los Angeles, Calif. 90064
2. Include everything that was done to the car other than stock from the kit. Too many of our entries lack the information that others are seeking.
3. Describe the paint scheme and brand of paint.
4. If it is possible, please print or typewrite all information.
5. Keep your backgrounds simple and uncluttered.

HERE'S WHAT YOU CAN WIN!

The 1st place winner of our Model of the Month contest receives this fantastic Dremel No. 261 Moto-Tool kit - a \$32.95 value! The kit contains the following: Powerful No. 260 Moto-Tool; 34 accessories including high-speed steel cutters, grinding wheels, wire and bristle brushes, rubber polishing tip, sanding discs, drum sander and sanding bands, mandrels, dressing stone, finger grip extension, collet wrench and 1/8" 3/32" 1/16" and 1/32" collets all in a molded polyethylene storage case! A magnificent lifetime tool set that is perfect for modelers.



This month our winner is out of Japan and the basic kit was the MRC-Tamiya Lola in 1/18 scale. Actually, Blaine R. Dickson is stationed in Japan and his overseas address is ETNZ, B519263, Box 7 NAS, Seattle, Washington 98767. The model is fantastic in every detail and shows craftsmanship at its finest. Let's let Blaine tell us in his own words how he won the Dremel Moto-Tool kit.

"This is my entry in your model of the month contest. The kit is the MRC-Tamiya 1/18 scale Lola TS-160. This is the second model I've attempted after a layoff of almost ten years from model building. Hence, I stayed pretty close to the stock kit, adding only some detail work.

"Included in the detail work are 1. Body. All body vents that are suppose to be open were opened. These include opening the right fender scoop and the hole behind the engine where the exhaust headers hang out. The kit had only two holes for the headers. In addition, a notch was made to accommodate the real oil cooler (which was not part of the kit). 2. Engine. The first thing I noticed about the engine was that it had some extra parts as well as some that were missing, though all trees were intact. I noticed (from the MCS Nissan article) that this engine probably serves double duty by appearing in both kits. The only major part missing was the magneto and this was made from a piece of rubber hose left over from the MRC-Tamiya 1/12 Matra kit. Another problem, due to the dual role of the engine, was that the headers needed to be altered to fit the support brackets. The rear oil



cooler was made from balsa and mounted on toothpicks in the holes for the Nissan cooler. The oil lines are painted black. The spark plug wires are made from heavy thread. Spark plugs are simulated by coating the ends of the thread with a Japanese contact cement and painting the thickened area white. The magneto is painted gloss black (two or three coats) to give

it a smooth metal-like finish. 3. Chassis and suspension. The chassis is pretty much stock, although the engine position was moved forward slightly to get the proper toe-in for the rear wheels. The front suspension is stock "mickey mouse" but the rear hangs on a radius rod and a ball point pen spring contact cement to the rear upright. The radiator hoses are from the Matra kit. The instrument wires are thread,



the ends that are attached to the gauges are painted. The flexible cable was simulated by twisting the thread and gluing it and painting it. The clamp is some semi-dry cement laid over the cable and painted black. To make the roll bar legal, a "loop" was added to go over the driver's head. Driver The driver comes in the standard eyes front position but a little filing on the head and arms got him into a cornering position.

"Color scheme" The body is unpainted, as the plastic was the right color, minus mold flows, and the only paint around is brush on, or hot red. Almost six hours were spent with

toothpaste to bring the body to its present lustre. It looks like paint. The wing is also a stock grey with black struts. The chassis is painted a "stale" (old semi-dried) Testors silver that is almost a flat finish when it dries, to simulate the aluminum tub. The roll bar is a "fresh" Testors silver and shiny. The radiator and wing supports are stock black.

"The driver has just one thin coat of Humbrol white in the driver's suit area, so that the suit looks a little off-white as the plastic almost shows through. The helmet is Humbrol white with Testors black trim. The face is visible and is Ullrich flesh with Testors

white and Humbrol blue eyes. Testors white is used for the Nomex. The harness and gloves are a Testors flat red with silver buckles on the harness. Humbrol red supplies the striping on the suit. The gauges are black with white lettering. The gauge wire is black until it reaches the flexible cable, which is silver. The steering wheel and column are Humbrol flat black.

"All body markings are from the decal sheet and set with a Japanese equivalent of Solvaset. Photos were taken by myself using a Canon FT QL with 135mm lens at $\frac{1}{500}$, using Tri-X.

The background is my cement porch."



A kit as pretty as the MRC-Tamiya 1/12 scale Honda F-1 can be assembled poorly, or it can be enhanced even more by a competent modeler. Don Swavely, Jr., of Annandale, Virginia, entered his perfectly detailed Honda in our contest. The kit is basically stock with these exceptions: The engine is completely wired, including wiring to all of the gauges and fuel pumps. The sharp looking injector plugs were made with jewelry chain and map pins. The cockpit features full instrument wiring, removable seat and working safety bells. Don buffed out the plastic using Auto World rubbing compound and wax, rather than painting it. The result is a flawless "paint" job.





It's kinda sad to see the demise of the old street rod in favor of gussied-up showroom "stockrods." There are still a few around and the altered category of racing is still a gas to watch. John Hannam from Portland, Oregon, has captured a bit of the old nostalgia with his wild n/ altered '29 Ford. The body is out of AMT's '29 Ford kit. The 427 OHC Ford mill once graced an AMT '33 Willys. Red sewing thread was used for wiring, and wire was used for fuel lines. The front axle came from IMC's Little Red Wagon kit. The roll bar came from an old slot car kit. The paint is five coats of Testor burgundy metal flake. The nice looking prints were done by John too!



Yet another entry in our altered category (if we had one) was presented by Keith Timmons of Mexico Beach, Florida. Keith's "Gasman" started as an IMC Volkswagen kit and a Monogram "Little T." All of the details include fuel lines, brakes, spark plugs, and full electrical system. The IMC Volkswagen frame and front and back axles were used first. Traction bars from the "Little T" were shortened and placed on the back axle. Everything on the motor from the Volkswagen kit was left stock except for the belt blower and the super charger from the Revell's '53 Panel Delivery. The seat mounts in the "Little T's" floor board were cut out and sanded smooth. A wide piece of black tape was trimmed and placed in the floor board. Everything in the interior was from the Volkswagen kit except for the seat which was from AMT's '55 Chevy Nomad. Interior includes gas pedal, hand brake, stickshift, fire extinguisher, clutch, steering wheel, and controls. The roll bar from IMC Volkswagen was shortened and electrical tape was used on the roll bar. The body has five coats of Testor green and the frame has two coats of Testor orange. The A.A.A. on the number plate on the side of the motor is gold Letra-Set lettering.

Steve Jones of Xenia, Ohio, really has a sharp eye for detail on Grand National stockers. Both cars feature working hood pin locks made out of needles. The Plymouth was made out of two Jo-Han roadrunner kits. The color is Testor's Competition Orange with a flat black hood. The engines in both cars are fully detailed to NASCAR specs. The '64 Ford was built out of a '64 Galaxie kit by AMT. It's typical of the cars run by southerners on the high banked ovals. To give you an idea of the detail here, take a look at the valve stems on the Plymouth and the wheel balancing weights on the Ford' Too much!



Don's truck is based on AMT's "California Hauler," the Peterbilt 359. It is now a type 352, western-style tractor with sleeper. To shorten the wheelbase, he removed 1-1/8" from each side frame rail. Then he assembled the frame and set it aside and started the cab.

The complete cab was built out of balsa wood, with the exception of the doors (they were used from the other truck). The cab was primed sanded and then painted burgundy and white.

Every part of the Peterbilt was used with the exception of the cab and the hood and the sleeper. The top is removable, and the doors are hinged. The entire cab is hinged to tilt completely forward. The seats are heavily padded. The interior is complete with bed pillow, sheet and also a small cabinet for storage. The interior is equipped with radio and curtain to divide the sleeping area from the rest of the cab area. The pogo stick is equipped with an electrical hookup for a trailer.

The exhaust pipes were heightened to two inches with 3/16" aluminum tubing and blackened with a match to simulate exhaust particles that collect on real pipes from diesel smoke. Interstate Commerce Commission decals from AMT's Fruehauf Van were used on the side of the tractor cab just behind each door. With off-and-on building, the tractor took about three weeks to build.





"SPEED PROBE"

Would you believe an H.O. streamliner built for a world land speed record run for slot cars?

BY BRICK PRICE

The madmen of the slot racing world are at it again! A dream which I thought was dead a long time ago is about to come true. The original dream was that of Jim Russell's, "Mr. Russkit," now with Aurora. Jim fathered the idea of a land speed record run for slot cars, but somehow it died on the vine, as highly complex ideas of this sort have a tendency to do.

The idea is back, and this time it looks like it might just come off. A land speed record run contest is in the works, to be run in the spring of 1971 (dates as yet unannounced).

I built "Speed Probe," shown here, as an "idea" car for this speed run. It's not the car I'll actually be running, and it's such a new car that I'm not offering it here as a "how to build it" article. I just want you to see the type of machines which can run in this wild contest. For that matter, you can run anything from a stock Aurora or TycoPro, right up to the hairiest H.O. streamliner. Or if you're a 1/32 or 1/24 fan, there are all kinds of classes for those two scales, too!

If you're interested, send a new six-cent stamp (send it loose in your letter, not glued down), plus your complete name, address and zip code to: KIEVE Enterprises, 2639 Greenmeadows Lane, Atlanta, Georgia 30319. You'll receive complete information on this speed run, but only if you include the new six-cent stamp and your name and address, clearly written.

Do it! This is going to be the event of the year in slot racing. And remember, it's for all scales.

32/Model Car Science

No, that's not a jet fighter taking off, it's "Speed Probe," an H.O. Bonneville streamliner which has been built for a world land speed record run contest, to be held in the spring of 1971.



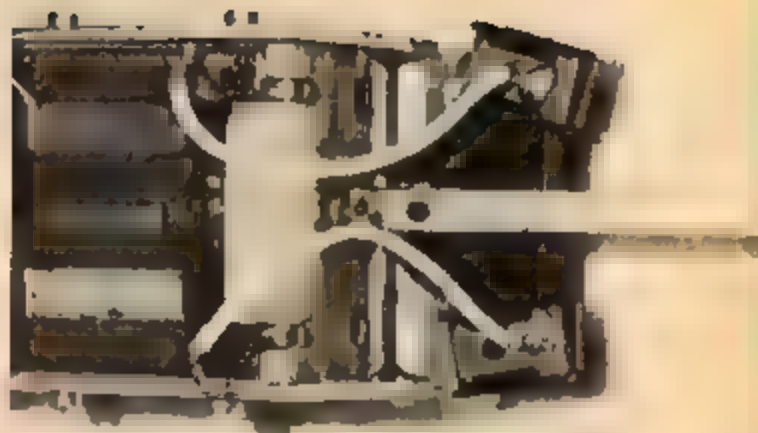
Speed Probe's unique body is made from a UPC 50¢ "Avenger" plastic airplane kit, modified, of course! The sleek body on the left is derived from the basic airplane fuselage on the right.



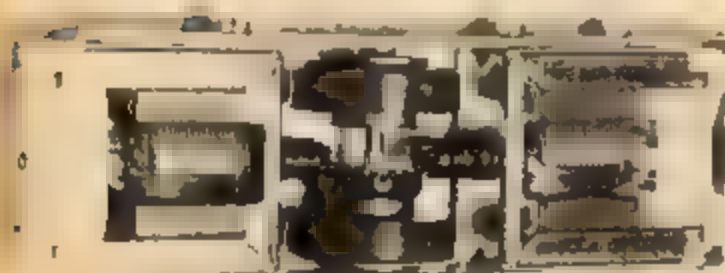
Two Mura H.O. motors are used, driving a common gear. Everything is packed snugly inside the body.



The front wheels have a much narrower tread than the rear, as you can see. Note the conventional TycoPro guide shoe to the left of the photo.



Here's a top view of the front motor and the pickup shoe



A closer view of the motor/drive train. When two motors are used, both drive the single crown gear. However, Speed Probe was designed to be used as a single-motor streamliner, too (for a different class), so one motor can be removed (you see it here, pivoting up out of the way, ready to be removed).

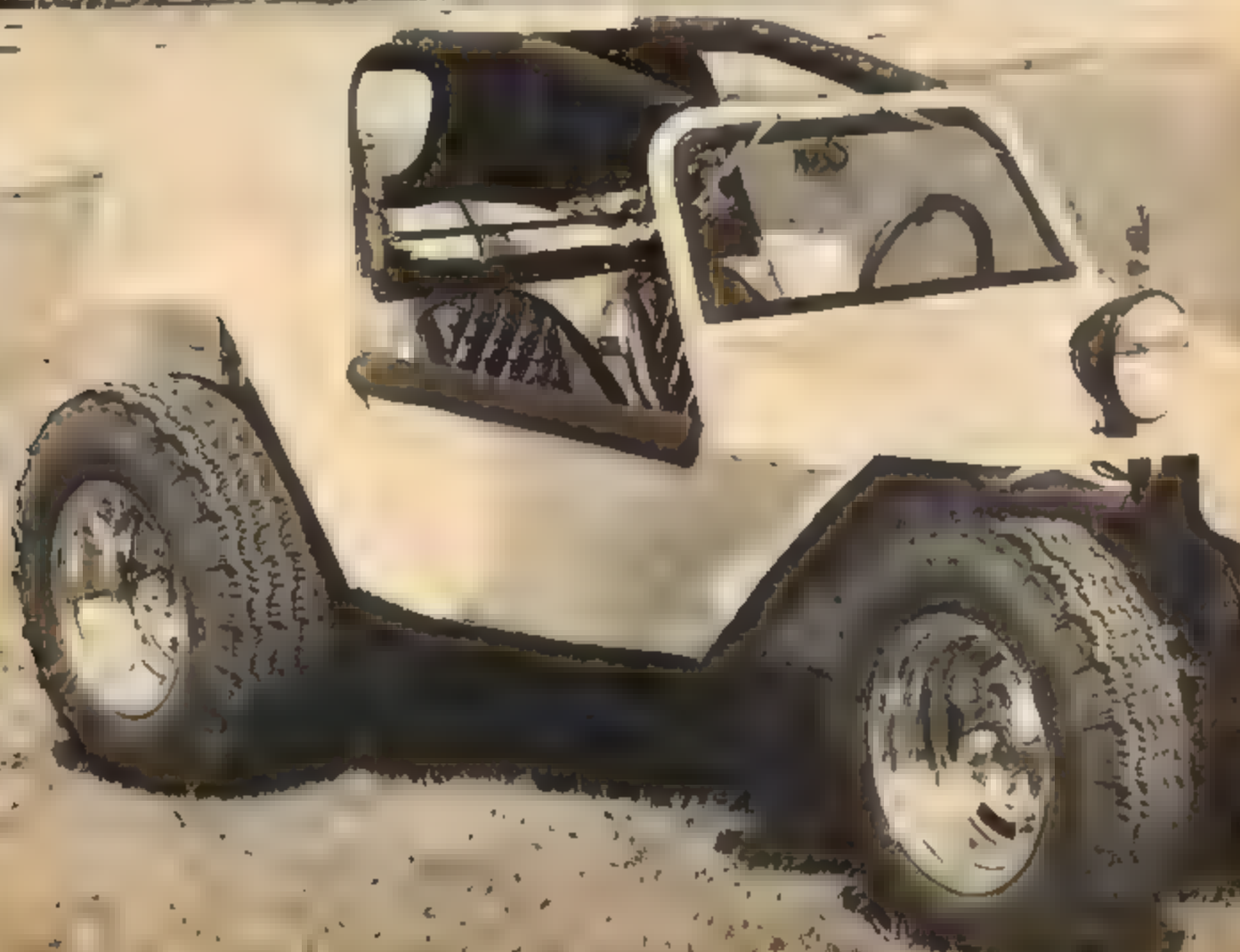


Would you say Speed Probe is long and low? Here it is compared to an H.O. Dodge Daytona!

BOULEVARD BUGGIES

By Ed Orr

INGENUITY AND MONEY CAN MAKE THESE CARS,
WHICH ARE ALREADY SOMETHING SPECIAL, SOMETHING SPECIAL



LEGAL BANDIDO

Accomplishment is many things to many men. What may be the final mile post at the end of a long journey to one is but a step in the right direction to another. While the multitude of problems attendant to building a dune buggy to operate safely and legally on our public highways are sufficient for most men to hone themselves against, it wasn't enough for Skip Rubsh of Los Angeles, California.

Most start with a buggy that was designed either for the street or at least as a dual purpose car. Not Rubsh. His choice was Funco's Bandido. This machine has one and only one function, and that is to cover unpaved terrain with a maximum of speed and comfort. It was never intended for the

street. Perhaps that was the attraction.

Rubsh started with a '64 VW roll-over from which he salvaged the front and rear ends. These he fitted to the Bandido's chassis and added a 1300 cc engine from a 1965 VW. Then he turned around and upped this to 1600 cc with a displacement kit. That and a set of Shoemaker headers were all the modifications he felt necessary in the power department.

The aluminum body was done by John Moriel at A-1 Auto in L.A. where Rubsh works. The lines were kept simple to reduce construction costs. Tail/brake/signal lights were borrowed from a '65 Chevy and make the rear of this bug about twice as visible after dark as a stock Volks. For street use Rubsh feels a paper element air cleaner is sufficient although he quickly amends that it will not do for off-road

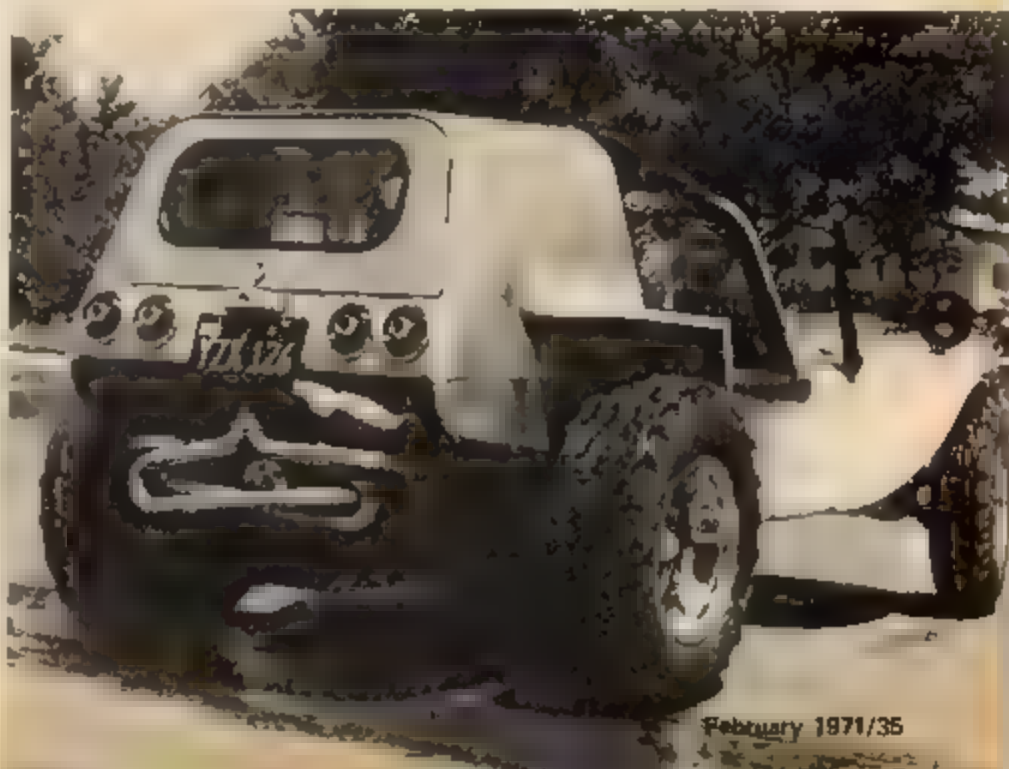
In compliance with California law the windshield is automotive safety glass and is equipped with dual wiper blades powered by American Bosch electric motors. Another of several legal necessities involves the emergency brake. It must be of a locking

type. But Rubsh wanted a steering brake as well. The usual answer is to settle for about half of each with a dual-handled conversion kit available from most buggy accessory manufacturers. But this is not the usual bug. Rubsh left the stock emergency brake handle in place and added an Almco hydraulic steering brake which has the advantage of operating on both rear shoes and thus gives a more positive response.

Inside the Legal Bandido Rubsh retained another stock item usually relegated to the junk heap — the steering post. This facilitated mounting the necessary turn signal switch. The seats are also manufactured by Funco and scaled for the car's dimensions. The dash holds a greater than average array of instruments including an Autometer tach and a Porche speedometer. The latter fits without alteration and has the advantage of an odometer.

Headlights are a simple matter as the Dietz Company makes a sealed beam (and therefore legal) unit especially for dune buggies.

The Bandido, world's starkest and purest off-road dune buggy, offers the best performance potential if it could be harnessed for the street. It was done here. Although fenders, lights, padded roll bars longitudinally and an enclosed rear compartment were added, the car retains its virility.



KUSTOM KYOTE

If an off-road dune buggy offers virtually limitless performance in unusual conditions, then its counterpart the street buggy — holds the same challenge in expressing individuality in appearance. An example of a show-car-quality street buggy is Dean Jeffries' Kustom Kyote shown here.

At first glance the refinements are not apparent, but a closer look will reveal that Jeffries has molded the nose piece and curved side panels into the basic body making a smooth single piece construction. In addition the fenders have been flared two inches in front and two and a half inches in the rear. The exterior side panels — which on an off-road version of the Kyote hold extra fuel — have cutouts on the inside for storage. The spaces are fully carpeted for an added touch of luxury.

A complete array of Stewart Warner instruments are laid out on a unique dash created by Jeffries. Using an acetylene torch set on the rich side to produce heavy, black smoke, he made a series of smudges on the metal. Then with a fine camel hair brush he swirled in the pattern. A coat of clear lacquer protects the design.

Another touch of individuality is the special deck lid that covers the rear seat and lends a sports car look to the bug. Jeffries intends to market these as an accessory to the Kyote body for those wishing to build a pure boulevard buggy.

The paint, another Jeffries specialty, is described as "a burgandy/rose/purple bottom with a pearl lavender top." Far out.

Little touches often make the difference with a street bug such as the brushed aluminum strip that covers the unsightly frame edge at the bottom of the body. Cragar wheels and custom bucket seats by Logan complete the appearance picture.

For running gear Jeffries selected a regulation shortened VW floor pan with a 1500 cc engine. To this he added 1600 cc barrels, dual port heads, Mallory ignition and a Crower cam. The rear torsion bar assembly and transaxle were replaced by the stronger pre-'60 model for better handling.



Extensive custom refinements were made without encroaching on the Kyote's basic appeal. Fenders have been flared, nose piece and side panels have been molded into the body. Paint is a combination of purples, lavenders, roses and burgandies.

BOULEVARD BUGGIES



Acetylene torch smudges brushed on metal, with camel's hair, provide an interesting dash panel

Photos By Bob Youngmans



Wind wings contribute slightly to comfort

FOREIGN FUNNY CAR

Here's how to stick some power in Porsche's bustle — in the form of a tried-and-true American Chevy V-8. Revell has the kit, we've got the imagination!

BY ROBERT SCHLEICHER

One of the true street "sleepers" on the streets of Los Angeles is the innocent looking Porsche of Rod Simpson. Rod's 1:1 scale Porsche 912 is the product of a search for a suitable engine for a car he purchased, less its engine, from an insurance company auction. The initial plan was the installation of a new or used Porsche engine to replace that stolen from the car but the ticket was too high. Simpson reasoned that an American V-8 would fill the bill at a fraction of the cost of the original German air-cooled four or six. After weeks of measuring, the 265-351 cubic inch Chevy was picked as being the lightest and smallest that would fit within the available area and the project Porsche/Chevy was launched.

Both Simpson and the Porsche fanatics were surprised to find that the relatively giant American engine would fit within the same space as the stock Porsche flat fours or sixes. Part of the front trunk space was lost to a radiator for the water-cooled Chevy but the interior of the car could be left nearly showroom stock. The water pump was relocated down beside the oil pan and an adapter made to allow use of the Porsche flywheel, transaxle, starter, and clutch. Simpson fitted a destroyed crankshaft in the Chevy to reduce its torque, dropping its displacement to 239 cubic inches. The complete car weighs a mere 2485 pounds, just 385 pounds more than a stock 912 Porsche.

Modelers who want something a bit different for their shelf will have an even easier time building the 1/25 scale duplicate of the Simpson Porsche/Chevy, thanks to Revell's new kit for the 911 Porsche. Revell also offers a variety of Chevy engines in their American car kits. Since all of these Revell kits are scaled to an equal and accurate 1/25, their Chevy engine will fit in their Porsche almost exactly like the engine swap in the full size car. We picked the engine from the Revell '53 Chevy Panel Delivery simply because we had one handy — a half-dozen other Chevy's from Revell offer similar engines. Simpson started with the four-cylinder-engined 912 Porsche but the body and chassis of the 911 (the full-size version of Revell's 1/25 scale model) are virtually identical except for the "911" legend across the engine compartment cover.

Both the hood and engine cover lids on the Revell 1/25



The only clue to the fact that this is a Porsche with a difference is that set of exhausts peeking from beneath the rear bumper — an American V-8 lurks beneath those covers.

scale Porsche 911 can be quickly modified to open revealing an American V-8 in place of the Porsche and, if you wish, a radiator in place of the spare tire up front. The Revell Chevy kit will supply both engine and radiator. The only other bits you'll need will be a couple of strips of sheet styrene or plain postcard stock. The Chevy's bell-housing and transmission are cut away and the engine glued to the Porsche transaxle with a styrene or postcard stock adapter. The Chevy mufflers are shortened and glued right to the stock exhaust headers. If you want an exact scale duplicate of Simpson's car you can cut a short spoiler to extend between the front bumper over-riders and fit a Chevy radiator inside the Porsche trunk.

The model is as much of a sleeper on your shelf as the real car is on the street — nobody expects to see that giant V-8 tucked so neatly beneath the Porsche's engine cover.



The stock Revell 1/25 scale Porsche 911 kit includes a highly detailed duplicate of the famous Porsche air-cooled flat six.



Full underbody detail and front suspension are just part of the extra-accurate detail on the first-ever kit for a 911 Porsche.



The interior includes the reclining bucket seats, tiny jump seats in the rear, and a complete dashboard and floor controls.



The body can be assembled first following the kit's instructions. Paint the silver "Porsche" nameplates with the side of the brush.



Decide whether or not to "open" the engine and trunk lids before painting and finishing the body. Glue windows with liquid cement.



Any one of a half-dozen Revell 1/25 scale Chevy kits can furnish the Chevy engine, mufflers and radiator for the Porsche/Chevy.



Assemble the complete chassis exactly as outlined in the instructions but do not glue the engine to the transaxle.



The bellhousing and transmission must be cut away from the stock Revell Chevy engine. Use a razor saw and file the cut smooth.



Trace the outline of the Chevy bellhousing on a piece of styrene or postcard stock and trim to shape with scissors.



The "U"-shaped styrene or postcard adapter is sandwiched between the Chevy engine and Porsche transaxle. Glue to engine first.



The full-size Chevy engine was fitted with a destroyed crankshaft to reduce the torque transferred through the Porsche clutch and gears



Shorten the Chevy mufflers to match the length of the engine and glue directly to the headers. The fan must be removed.



The Chevy engine will fit easily beneath the Porsche engine cover if the air cleaners are not fitted. Radiator fits in trunk



The Porsche body snaps over the chassis. If you fit an opening hood and engine cover the body can be glued tightly in place.



TRICK TARGA

So you've got a Porsche coupe and you've always wanted a Targa. Here's how to remedy that!

Ah, sweet Porsche! In the past, I've raved about the various models that I've built for the magazine, but this time I know from experience. The 1:1 scale Porsche featured is my own little piece of German machinery. The silver coupe has carried me over some 50,000 miles of concrete and tarmac. In my opinion, the Porsche stands head and shoulders above any sports car under \$10,000 and the various magazines of the sports automotive world will bear that statement out. You can argue 'til the sun sets in the east but when it comes time to sell your used-but-not-abused sports car, then tell me the value of any other car. A good friend of mine owns a certain English cat that he said was the finest sports car in the world under 10,000 shekles. He bought his within the same month as I, and his car is now worth approximately \$1,200 less than the Porsche. His car is a little faster but it takes a \$120 tuneup to make it that way and that tuneup comes about every two to three months. The little Porsche just keeps running about the same, month after month. The gas mileage suffers somewhat in town (it drops to about 23 mph) but on the road it jumps back to 26 even. I had the opportunity to buy a Targa instead of the coupe and I am somewhat sorry, now that I didn't. However, if you happen to live in Colorful Colorado, where the temperature can get down in the teens occasionally, the coupe remains comfy year-round while the topless version does tend to be a little cool. I had a "D" roadster before the coupe and I certainly wouldn't go back to the ragtop. However, the featured model in this article is the convertible version of the 900 series Porsche known as the "Targa." The Targa features a roll bar and the top extends both fore and aft with body and windshield attachments.

We are converting the new Revell 911 Coupe to the Targa version, and it is surprisingly easy to customize. A couple of cuts here and there and a little plastic scrap to make the roll bar and you're now topless! My senses tell me that the word topless has been over-used but what do I say, you're a convertible? Oh, well, let's build this little honey and put the others in the shade.

BY BEN MILLSAUGH



First, using a jeweler's saw, cut the top carefully away from the body and windshield. Be very careful not to break the windshield frame.



A gentle sanding of the sawed parts and a final rub-down with No. 000 steel wool will finish the body off just the right way



Using the template provided and a piece of .020 to .030 sheet styrene, form the roll bar. A scribe with a sharp X-Acto knife will be all that is necessary to break the piece away from the sheet stock.



Carefully bend the piece to shape and "sight" across the windshield frame, from the front, to make sure that it is set right. Cement in

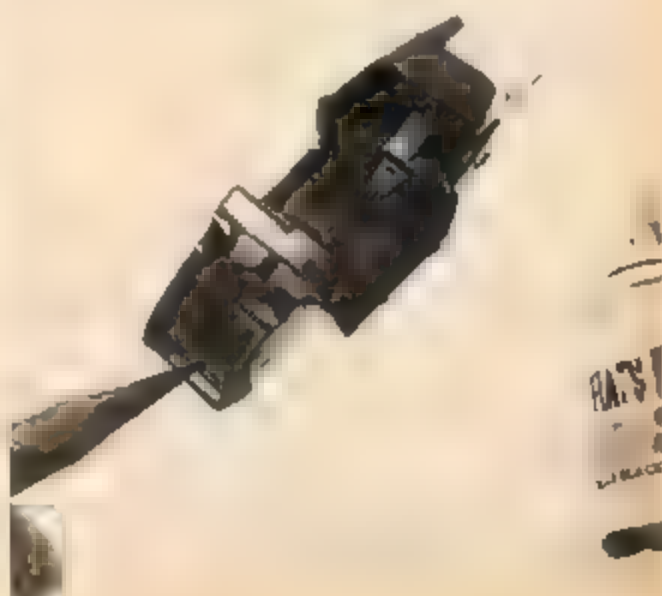


The Porsche comes in a myriad of colors but this little car just seemed to be right in Pactra S-13 Orange. You might try a deep burgundy also



Liquid rubber should be touched into the holes for the seats and other areas where further cementing will be necessary after painting. When dry, this acts as a mask which can be removed before painting for a perfect cement contact.

42/Model Car Science



Pactra's Scale Flat Black was used to spray the cockpit area.



The finely detailed little 911 engine is now installed.



The seats are installed, along with the wheels, and trimmed in the old standby, Testor's silver bottle paint



Spray a little of the Pactra Scale Black into the can cover and brush into the area between the "spokes" of the mag wheels. This will highlight the mags, giving a more realistic appearance



The seats were shot with Pactra Flat Earth. This is very neat in appearance and goes well with either orange or burgundy



Since we're not going to use the full side window, cut the window away from the sideglass using a razor saw, or the previously mentioned jeweler's saw.



Using either chrome paint or Metalskin, put a silver finish on the roll bar. A few little touches of detailing and your P. Wagen is complete.



THE ULTIMATE DUNE BUGGY?

BY ROBERT SCHLEICHER

MPC's "Moon Scope" might just be exactly that!

Most of the moon landing transportation vehicles have been developed through tests on our earth-bound deserts. With the exception of the moon's temperature extremes and the differences in gravity, as compared to our planet, the lunar surface and the slopes of the sand dunes are similar — mobility over either type of terrain requires a vehicle with high flotation (the ability to travel over, not sink into the surface) and a large amount of suspension travel to compensate for the irregularities of the ground.

George Barris' stylized conception of the type of vehicle that future lunar landing parties would require meets most of the criteria that scientists have deemed essential, with the usual Barris style and custom touches making it pretty as well as practical. We took one look at the drawings for the proposed "Moon Scope" and decided that it would be every bit as exciting a dune buggy as a lunar exploration module. When MPC announced their 1/25 scale model of the car, we had the chance to try out our ideas for adapting the machine to driving over the dunes.

Barris did the best he could to make his full-size "Moon Scope" at least a simulated model of the exact type of vehicle that would be needed on the moon. The power, for example, is provided by General Electric motors that don't require earth's oxygen for their operation. Both the front

and rear pairs of wheels steer to give the tightest possible turning radius and all six wheels are articulated on long swinging arms and shock absorbers for maximum up and down travel. The "Moon Scope's" light weight and the six super-wide tires combine to keep the vehicle on top of the softest sand. An automated, rotating camera is mounted on top of the fully enclosed cabin to monitor a full 360° sweep around the vehicle. Radar antennas inside the "Moon Scope" judge the ground clearance and depth of the powdery moon surface. All of these instruments, in addition to tape recorders and other inputs, are recorded on computer readout tapes for later debriefing.

For an earth-bound transportation module, much of the extra-terrestrial equipment is unnecessary. We removed the center pair of wheels since they just aren't needed for stability across the dunes. A Volkswagen engine from the MPC "Kyote" kit replaces the simulated G.E. electric motor in the kit. Finally, the limited ground clearance was increased to cope with earth's greater gravity. The completed off-roader, dubbed the "Moon Dune," is the type of ultra-light two-seater that could win a cross-country race like the Baja 1000 or Mint 400. With the Barris styling touch and all of that aerospace engineering, the "Moon Dune" may be the ultimate off road racer. Maybe George will build a similar full-size version of our 1/25 scale model — we've proven that it can be done.



George Barris' most "out of this world" creation yet – the "Moon Scope" was designed and engineered to transport a pair of our astronauts across the lunar landscape. MPC has the 1/25 scale kit.



Heat the center of the front axle over a candle or lighter until the plastic is soft, then bend about 15°. Practice on scrap.



The smallest tires and wheels from the middle axle in the MPC "Moon Scope" kit are attached to the ends of the front axle.



The rear axle must be bent to match the angle of the modified front axle. Bend on each side of the differential.



The medium width tires from the front of the stock "Moon Scope" kit are glued to the rear axle. Save the wide rears for another car.



The rear cross bar must be trimmed from the stock kit's chassis to provide clearance for either a Corvair or Volkswagen engine.



Slice the top suspension mounting lugs, for the center axle, from the sides of the lower body piece and sand smooth.



Twin notches must be filed in the front edges of the body to clear the altered front axle and suspension.



Use a razor saw to cut the louvered back panel from the lower body piece; again, to clear the Corvair or VW engine.



MPC's "Kyote" dune buggy kit will supply an alternate VW engine to replace the simulated G.E. electric motor in the "Moon Scope."



Assemble the suspension per the kit instructions. The VW engine will glue right to the rear axle's differential



Cut the rear of the interior piece away just behind the rear seats to eliminate the electric motor mount and to clear the VW



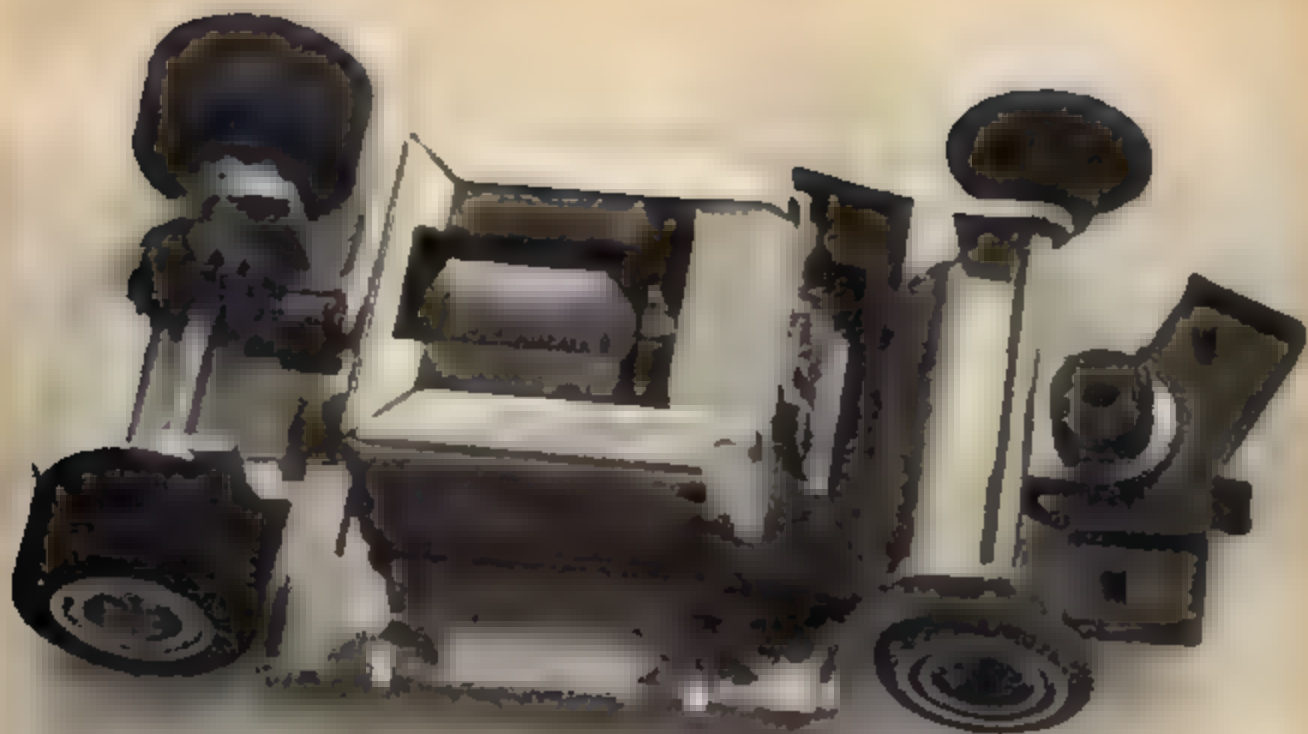
The interior, seats and steering are all mounted per the kit's instructions. Rear chassis braces must be cut to fit the VW



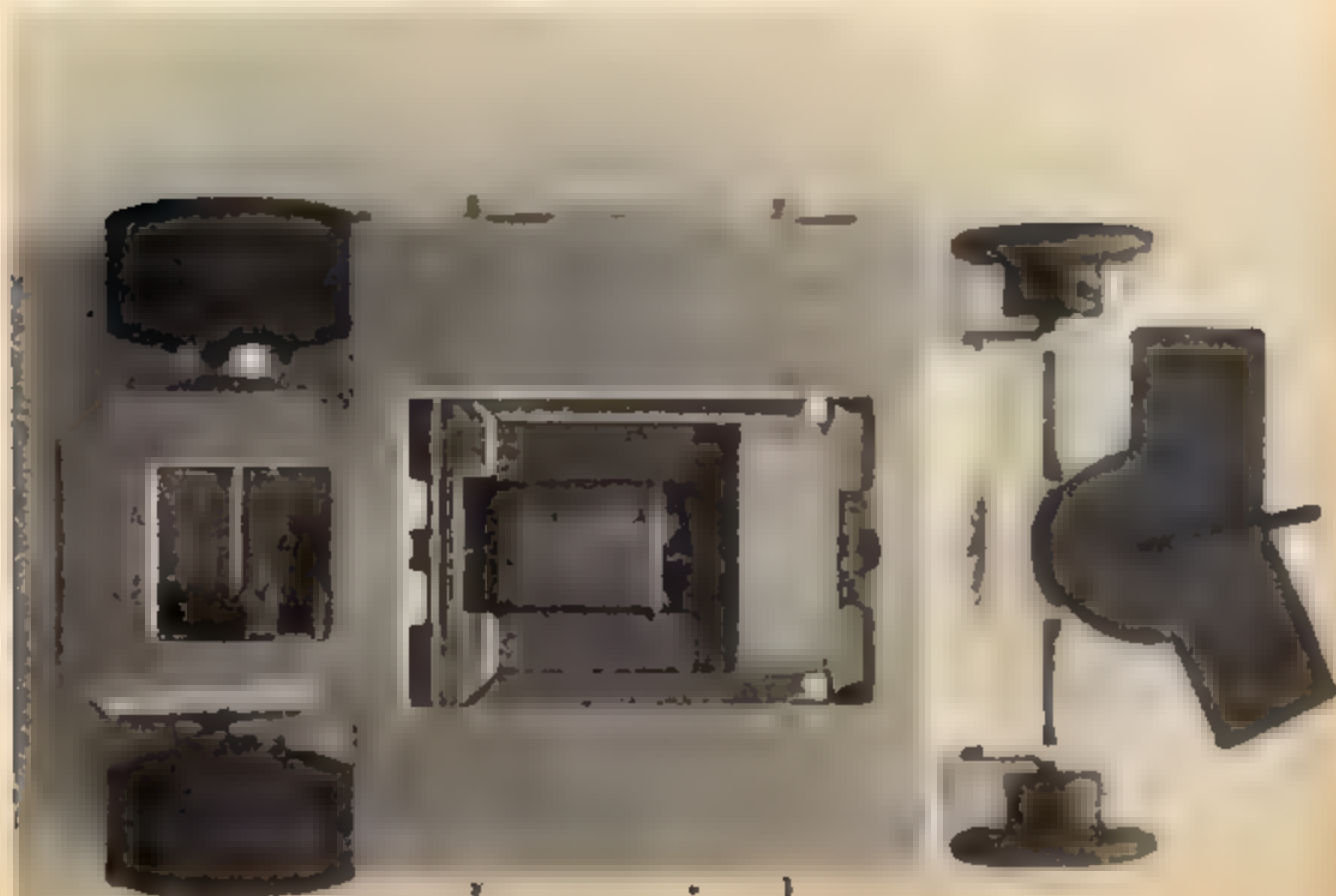
The upper body panel is glued in place, painted, and marked with the red, white and blue kit decals. The Barris styling and space-age engineering make the vehicle the most exciting and practical off road racer dune buggy yet

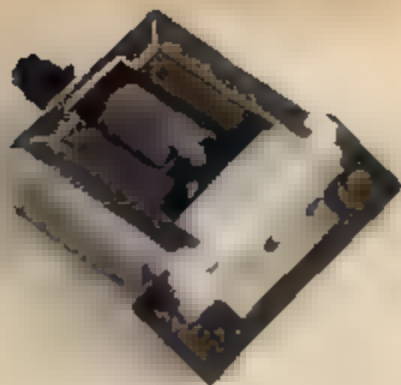


The original Barris "Moon Scope" featured tractor-type tires. The full-size design projection included the super-wide "skins" used in the MPC 1/25 scale kit of the car. Look for the real thing at auto shows across the country.



Here's that long-anticipated H.O. car from Riggan Manufacturing Company. It's one of the finest handling, quickest inlines on the market, thanks to a really hairy motor, wide soft rear tires (on set-screw, turned aluminum hubs) and a "trick" body mounting system.





If you are wondering what that black plastic affair is on the front of the motor, here's a closer view. It's an ingenious little device which clamps the motor lead wires to the motor brushes without having to resort to hold-down screws or solder.

Here's the first look at a brand new "wee scale" road racer — from those "tire folks"

RIGGEN'S NEW H.O. CAR!

When Riggen Manufacturing Company called us down to their Gardena plant recently, we hastened there with a great deal of anticipation. We'd heard rumors of an impending H.O. car from these famous "tire and wheel" people for some time, and we were frankly anxious to see if their car would live up to our expectations.

It impressed us then, and does now even more so, as we've had the chance to put many, many laps on this new inline H.O. car. It's built with the quality you'd expect from Riggen, and there's nothing else to buy, even if you're in a hard-posed club and find it difficult to get into that winner's circle.

At \$4.95, the price is about a dollar higher than another competitive inline on the market. Is it worth it? An unqualified "yes!" For instance, forget about having to run out and purchase a set of accessory tires and wheels to get the car to handle — the rear units are splendid, wide and soft and sticky as can be. Likewise, the motor has a hot wind and is a real screamer.

The car is s-o-o-o smooth to drive it's an absolute pleasure, from the moment you pick the controller up until you put it down, hours later. You can run a long race with this car without fatigue. It handles, right out of the box.

It's good to see a new, quality H.O. car on the market. H.O. racing is warming up, and here's the "barn burner" to prove it!



Here are the bits and pieces which make up this excellent car. If you're a bit "put off" by the \$4.95 price tag, don't be! The car doesn't need a single accessory to be competitive. Wide rear tires are standard, and they're superb. The motor is hot, so no rewind job has to be purchased. All-in-all, it's a real buy.



Here's the "trick" body mounting system. The top photo shows the bare, stamped brass chassis. The bottom photo shows the rectangular brass stamped body mounting plate slipped in place over the chassis. When the motor is installed, the plate is loosely "captured" between the motor and the chassis. The body is free to "rattle around" (in conjunction with the floating plate to which it is attached) on the chassis, which does a splendid job of killing vibrations.

THE BEST IN FRANCE?

Surely! And indeed, AMT's Heller-produced plastic static models may just rank as some of the very best in the world!

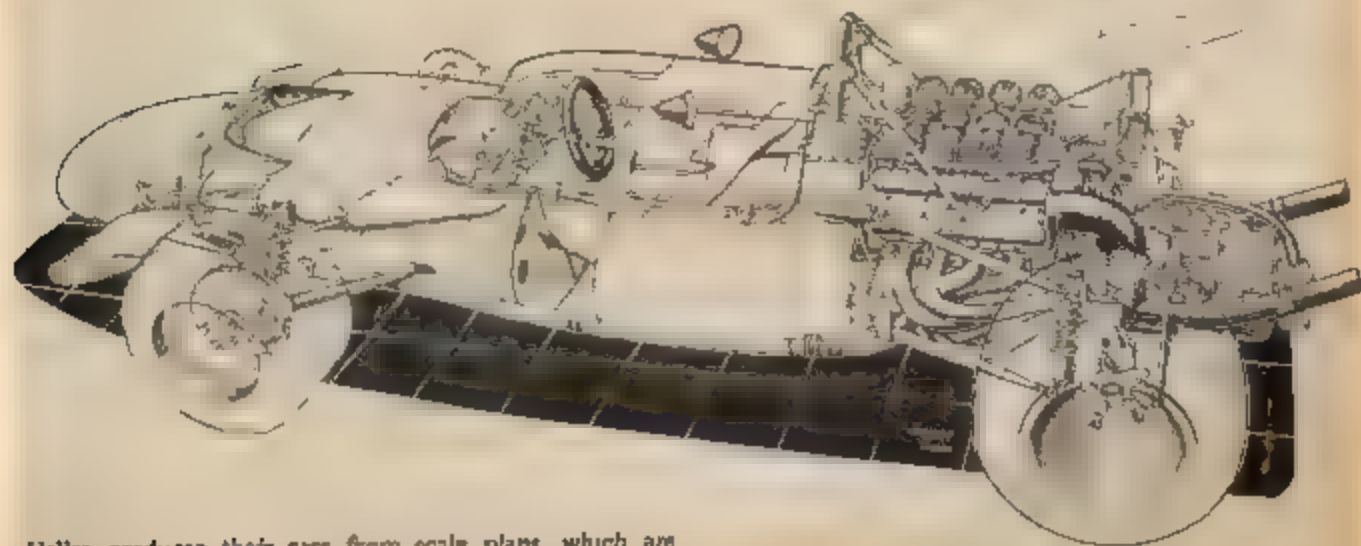
Heller is the most important kit manufacturer in Continental Europe, producing boats, airplanes and car kits, the most accurate imaginable and in a fantastically complex selection.

The quality of the mouldings in these kits is, in our opinion, at least as good as any in the world, quite possibly the best anywhere. The 150 or so craftsmen who work for Heller, in France, are highly skilled and selected from all over Europe. The end result of their skill can be seen and appreciated in every Heller kit.

Heller kits are imported into and distributed in this country by AMT. They sell these magnificent models in double car kits at a very reasonable price. We heartily recommend that you look them over carefully if you're interested in obtaining highly unusual and truly accurate versions of some of the really great European cars.



This Heller-made Ferrari is imported into this country by AMT and sold in their famous double car kits. This kind of detail is rare in modeling, especially for the low price.



Heller produces their cars from scale plans, which are completed by using many photos, measurements and drawings such as this.



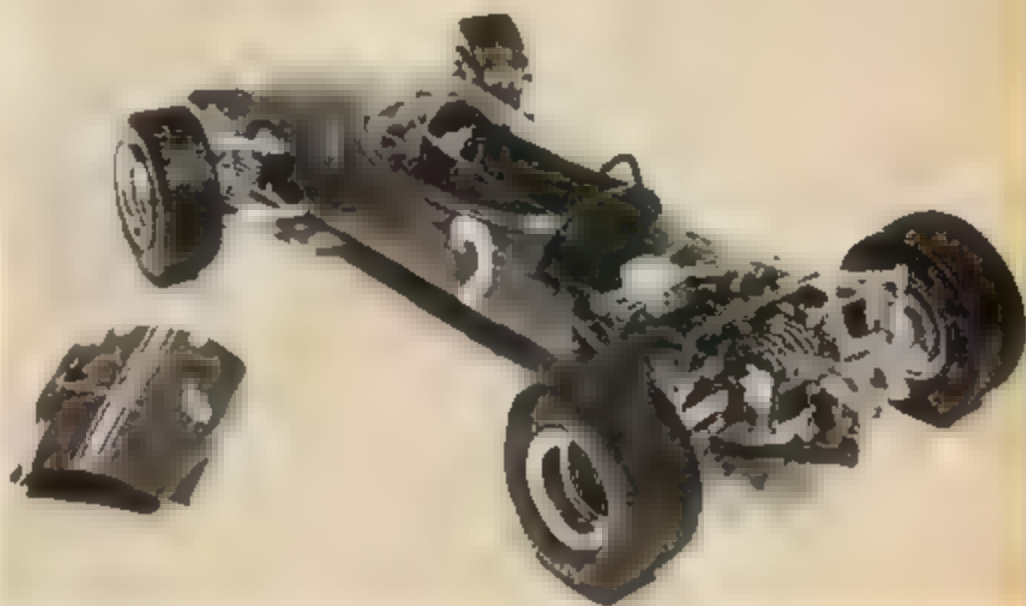
More views of the fantastic AMT Heiler Ferrari. You can see the overwhelming amount of detail. Note the coil springs, working shock absorbers, working half-shafts, accurate exhaust system, holes in the steering wheel, etc. There's nearly everything you could ask for on this 1/24 scale kit.



Not too many people are familiar with this remarkable automobile - the Renault R8 Gordini. It's a sports version of a production Renault. With a 1,300 cc engine developing 105 hp, this car goes 110 mph! It has a five-speed gearbox and the handling of a Mini-Cooper. The kit features the best chrome job we've seen yet, working steering, Dunlop S.P. tires, "Delta" mag wheels, and many more details.



Simple, but accurate, is this splendid "long tail" Porsche 907. This car belongs in every serious modeler's collection. All of these cars are imported into the U.S. by AMT, and sold in double car kits in hobby shops, department stores, and everywhere fine models are sold. We recommend them highly.



This fantastic Brabham was acclaimed by one of Europe's leading automotive magazines to be one of the greatest 1/24 scale kits in the world. A tubular chassis is featured, along with removable body panels, suspension with springs, full wiring, a Hewland gearbox and Ford Cosworth engine, etc. Utterly magnificent! We feel every true enthusiast should look these AMT kits over.

Revell's exciting 1/8 scale Kawasaki makes a slippery looking three-wheeler!

By Robert Schleicher

In the two-wheeled world you'll find "super bikes" that're more than the equal of "super cars." For less than a third of the cost of a full-size Dodge Hemi, Ford Mach I or any other 400-plus cubic inch engined car, you can buy a motorcycle with better off-the-line performance. Now there's a big-as-life-size (actually 1/8 scale) model kit for one of the fastest "super" bikes — the Kawasaki Mach III from Revell.

The Mach III joins a whole stable of 1/8 scale motorcycle kits from Revell that include a dozen or so Hondas, Yamahas, Triumphs, and Harley Davidsons. Like the rest of the two-wheeled performance series, the Revell Kawasaki kit includes really "super" details like individual pedals for the rider and passenger, gear shift and brake; a full compliment of chrome parts; rubber-like tires with proper tread patterns; and all of the exposed cables, wires and fuel/oil lines of the real thing. Even the most finicky super-detail hound will find little he can add to any of these superb kits.

Motorcycle dealers and riders are quick to get their favorite brands onto the road racing courses (with a bit of help from the factories or importers). Within less than a year of its introduction, the Kawasaki trooped had machines in serious competition on the road courses and drag strips. The more rabid (what else would you call one who hangs his body an even inch above the track at 150 mph?) riders and their passengers were even adapting the Mach III Kawasaki to three-wheeled "sidcar" competition.

The racing rules allow competitors to modify their mounts with smaller wheels, lowered suspensions, and the framework to support that third outboard wheel. If the sidcar passenger can swing his weight to the inside of the corner, these racing sidcars can be made to handle more-or-less like a four-wheel racing vehicle. If he allows the machine to tip toward the sidcar, the rear wheel becomes airborne with the expected disastrous results. If the machine is allowed to tip toward the "driver's" side, the weight transfer often rolls the machine (with or without its rider and passenger) completely over onto the track. It's the most dangerous of the racing sports, with less than half of the previous world sidcar racing champion riders or passengers still alive. It's worth a trip to any motorcycle road race to watch the scrambling passenger's antics through the corners.

The Revell Kawasaki Mach III kit is set up to exactly duplicate the stock street model. You can do like the real racing bike builders do, however, and add racing handlebars (from Revell's 1/8 scale Honda) and remove the lights, front fender and other non-racing hardware. The streamlined "fairing" from the Revell Honda can be used, along with the scale 16" wheel from the Revell 1/8 scale Harley Davidson and scraps of plastic to produce a sidcar for your Kawasaki.

A three-wheeled "Mach III" just has to be right because it SOUNDS right! Right?

A complex-appearing model like Revell's Mach III is easy enough to build if each major component is assembled first.

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MACH III KAWASAKI



Revell's 1/8 scale model of this Kawasaki Mach III includes all the super detail parts you could imagine, right down to a full set of cables, wires and fuel lines.





The "trick" cross-under center exhaust pipe from the third cylinder is routed to one side just like the real machine's.



The front fork assembly is completed as a unit before attaching to the finished frame and engine units. Tires are accurate.



Block up the frame and engine with a small paint bottle while the glue on the steering head dries 24 hours or more. Wiring's next.



The wiring, control cables and fuel lines are installed per kit's instructions. The instruments have numbers and "glass."



For the "road racer" conversion, remove the front footpegs, shorten shift lever and glue lever facing rear of machine.



Rear "passenger" pegs are used for road racing so rider can "tuck in" lower on machine for less wind resistance. The brake pedal must be shortened and reversed.



The "clip-on" handlebars from the Revel road racing Honda must be cut apart to fit around the front forks on Kawasaki.



"Clip-on" handlebars also help road racing riders to keep tucked down low for less wind resistance. Shorten cables to fit.



With lights removed, foot controls moved toward the rear pegs, and low handlebars, the Mach III is road-race ready.



The scrap plastic "tree" from the Revell Harley Davidson kit is used to make a frame for our 1/8 scale sidecar



The rear wheel, tire and swinging arm from the Revell Harley Davidson are modified to support the racing sidecar.



Trim away the majority of the tangs from the scrap plastic "tree" and glue the sidecar wheel support to one side.



A piece of sheet plastic or postcard can be used for the floor of the sidecar with a cut-down "fairing" from the racing Honda

Glue the completed sidecar to the Kawasaki frame with extensions cut from scrap plastic. Road racing Honda supplies fairing and number



THE ART OF SCRATCHBUILDING

WE'VE DISCUSSED, THUS FAR, the construction of frames, suspensions, wheels, and axles. If our subject interests you (and we hope it will) but you're a new reader, copies of the MCS issues containing the previous installments of this series may be obtained from the publisher.

Let's consider, this time, the engine of our scratchbuilt car. I suppose that a dummy engine could be formed up entirely from sheet brass, tab-soldered, with excellent results. My own inclination, however, is to use wood - preferably white pine - for the major parts (head, block and crankcase) employing a separate piece for each. Blocks are first cut to size and then carved and filed as required to obtain a realistic shape. Balsa can be used, of course, but then you have the eternal problem of achieving a smooth finish. It's hard enough to do that on a relatively smooth car body, without tangling with the intricate convolutions of most engines!

I repeat, shape the head, the cylinder-block, the crankcase, and the oil-pan from wood. Cement them together in proper alignment then prime sand and paint. If you wish to include the flange between oil-pan and crankcase cut it from sheet metal or cardstock and cement it between the two corresponding pieces. Use a blunt-pointed punch or old ball-point pen to raise duplicates along the edge of the flange; these will simulate the pan-bolt heads, if desired. Some cars,

such as the old SS-100, Bugatti Type 35, and some Alfas, had a ribbed oil pan to improve lubricant cooling. A knife-edge file can be used to cut grooves in the part, providing fins or ribs. The same applies to the head and cylinders of any air-cooled engine.

Some engines have exposed valve push-rods. If these appear between any of the basic parts (e.g., in the early Ford T, they're visible between the crankcase and the upper part of the block), cut the pushrods from pins, add fine-wire spirals to simulate the valve-springs, and insert them between the block parts. In this case, the wooden sub-assemblies should be painted beforehand, since the rods and springs should remain bare metal.

I generally use balsa for the timing-gear housing at the front of the engine, since it's all but invisible in the finished model, anyway, and may be of irregular shape. Be sure to position it accurately.

Fan-belt pulleys are most easily made by filing a flat or V groove into the circumference of a piece of proper-size dowel stock, drilling for a shaft, and then sawing off. Lay out the fan on brass or cardstock by starting with a circle of proper diameter, inscribing the two, four, or more blades, and then cutting out with shears. Bend the blades slightly to give them an air-scooping twist and cement to the pulley.

Fabricate the water-pump from one or more pieces of balsa, shaping with fine files and sandpaper after cutting to approximate shape. The pump outlet should be round, to accept brass-tubing water hose during final assembly. Cement the pump in place, add the fan and fan-pulley on a pin shaft - after painting - and check their position. In some cases, the water-pump is shaft-driven from the timing-gears. The fan is then mounted separately on a sheet-metal bracket (or one shaped from wood strips). Use brass rod or heavy wire for the pump drive.

A bit of brass rod or dowel forms the crankshaft extension. Mount a pulley on this, and if the generator is *not* driven from the fan-belt, cut a thin strip of masking tape and wrap it over the fan and crankshaft pulleys. If the generator is belt-driven, wait 'til you've installed it before adding the belt. In either case, paint the belt flat red or flat black.

If you're building an overhead-valve (or overhead-cam) engine, the rocker-arms or cam cover(s) can be shaped from wood, the same as the other major parts. The heads of pins driven into the cover(s) simulate the usual fastenings, or you can get fancy and

make small wing-nuts or other fasteners as desired. The absence of head-bolts on a model L-head engine usually isn't noticeable, but if you want to include them, they may be made from 1/32-inch slices of brass hex stock, dowel-stock filed to hex shape, or from 00-90 hex-head bolts. The latter course is quite expensive, as these sell at around 75¢ a dozen, but produces the most authentic appearance.

Exhaust and intake manifolds are best shaped from balsa, being of irregular profile. Since some fairly thin sections are involved, keep the wood soaked with sanding-sealer as you work. This helps to strengthen it.

Carburetors differ widely, depending on era and type of car. No matter what type - updraft, down-draft, or side-draft - they can be simulated from small pieces of wood, dowel-stock, and tubing. The idea, here, is to capture the general spirit and flavor of the part, even if you can't faithfully reproduce every little bump and hollow. We've used Lacite for clear filter-bowls or - sometimes - suitably shaped clear plastic lamps from model car kits. Fuel pumps, where used, are made in the same way as carburetors.

Generators and starting motors are very similar. Make these from dowel stock of the proper diameter, and add a bond-paper band for the brush-hole cover. Relays and regulators are merely small blocks of wood cemented in place. The generator pulley, for belt-driven generators, is made in the same way as the fan pulley.

Distributors and magnetos come in various shapes, but can be simulated with dowel-stock and wooden blocks. Drill small holes for the sparkplug wires before you install these parts on the engine.

Sparkplugs are merely little pieces, but it's worthwhile to model them. I use 1/16-inch dowel, shaping the plug on one end of a longer piece, drilling the very tip for the wire, and then cutting off my plug. Cement the plugs into shallow holes drilled into the engine head. These holes should be somewhat oversize and beveled on their upper edges. Paint the plugs white with brass tips.

You probably have your own favorite material for sparkplug wires, but I like heavy button-thread as it's just stiff enough to "drape" properly and, being heavily waxed, it doesn't have a "fuzzy" look. When the wires run through a conduit, you can either make this from dowel-stock and merely insert short "wires" into holes drilled in each end, or you can use

Continued on Page 57

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brass tubing, drilled to accept the wires, and actually feed full-length pieces through from the sparkplug ends. Cement the conduit to the block, or mount it on wire brackets, then complete the wiring from the plugs to the magnetor or distributor. Don't overlook the coil (for distributor-type ignition); one is easily made from dowel stock. Run a wire from it to the center-post of the distributor cap.

Copper wire is correct for fuel lines. Check carefully to follow the "run" of the piping on the original and if you intend to run a line from the pump to the gas tank, be sure you've provided a hole in the pump housing. Many older cars used pressure feed or a vacuum tank; the latter can be made from dowel, wrapped with thin paper bands and outfitted with dowel valve and strainer caps with wire vacuum and fuel lines. Steel wire works best for carburetor and other control rods, but these installations may have to wait until you've mounted the engine in the chassis and added the body.

We haven't mentioned superchargers, but these, of course, are made up the same as the other accessories. They may be ribbed with a file, same as "air-cooled" oil pans, and a suitable drive worked up from wire, dowel, and sometimes cardstock. For really deep, sharp ribs, build up the supercharger housing from ovals of thin wood and cardstock, the latter being slightly larger than the former. Glue together in "sandwich" form.

For a flywheel housing, I generally try to find a discarded broomstick or a piece of dowel stock of suitable diameter. Failing this, I lay out a circle of the correct diameter on sheet balsa and trim it very carefully, finishing with sandpaper. The "transition member" — the clutch housing — is made the same way, but the front-end dimensions of the transmission are laid out on the clutch disk and the wood trimmed away to obtain the proper slopes. This sounds difficult, but it's really quite easy.

The transmission, itself, is a block of wood trimmed to suitable shape. Drill the rear face to receive the driveshaft, or, if a transmission brake is fitted, add this part (dowel-stock again, suitably detailed with wire, a small spring, and possibly a sheet brass actuator arm) and drill for the shaft. Since the top of the transmission is usually hidden by the floor-boards, you need not detail it unless you wish, or unless you plan to fit a removable body.

The driveshaft may be brass rod or

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A word about colors: generally speaking, engines are finished in grey, blue, or green, although aluminum may be used to simulate a polished block. (In fact, Rub-N-Buff silver looks more like polished aluminum than does aluminum, itself!) The generator, starting motor, and distributor (or magneto) are almost invariably black. Intake manifolds, usually of cast metal, might be painted aluminum or an "iron grey" mixture of black and aluminum enamels. Exhaust manifolds, unless porcelainized as on some classics, are usually rusted — a flat reddish-brown is suitable. Carburetors are most often die-cast metal and hence aluminum painted; sometimes they're brass or bronze. Crankcases may be the same color as the engine, or black, or aluminum. The same applies to the timing-gear housings. Fans are most often done in gloss black.

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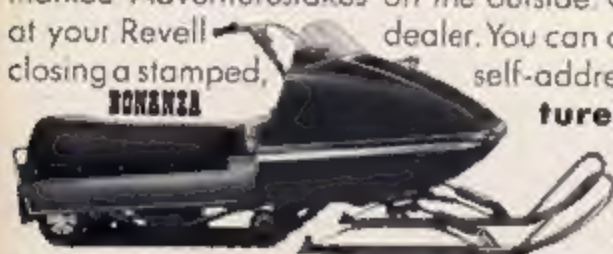
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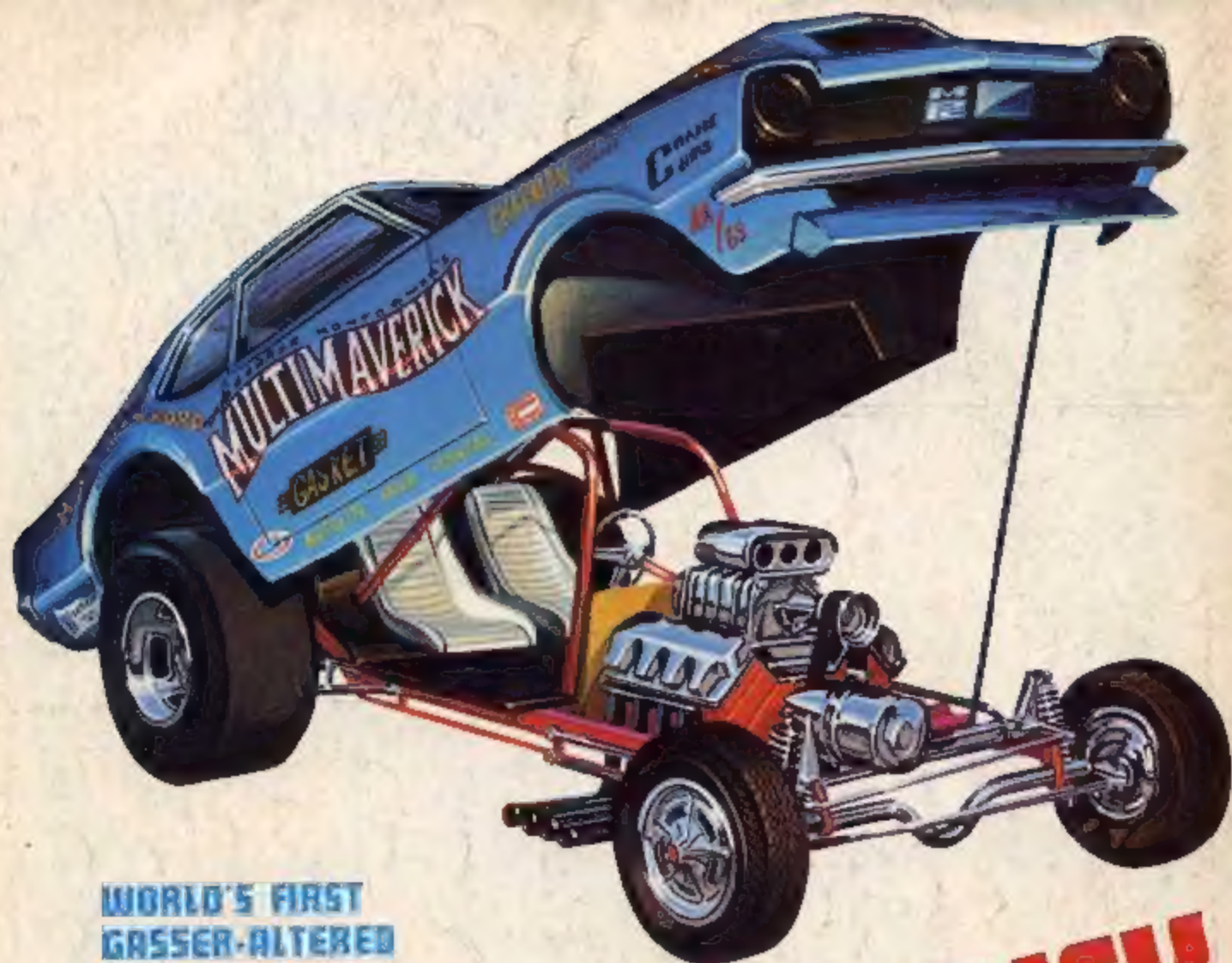
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